E-BILLING EXT™

Enterprise Level Automated Energy and Commodity Reporting and Billing Software Application

Installation & Operation Manual

V.1.02

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Electro Industries/GaugeTech

The Leader In Power Monitoring and Smart Grid Solutions

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E-Billing EXT™ Installation and Operation Manual Version 1.02

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Software version 3.0

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1: Step 1 - Install the E-Billing EXT™ Application

1.1: Overview

The E-Billing EXT™ application is a fully customizable software application that lets you create and view an Energy Dashboard, analyze costs, and automatically generate detailed Energy usage reports and usage bills using either the Communicator EXT™ application databases or the HMI EXT™ application's polling engine (see the *HMI EXT™ User Manual* and the *Communicator EXT™ 3.0 User Manual* for additional information on these applications). The E-Billing EXT™ application was created for use with Electro Industries' Shark® 200 and 200S meters, the MP200 metering system, and all Nexus® series meters. The E-Billing EXT™ application performs complex calculations, such as multiple entity aggregation, and supports user-programmable rate and tariff structures. This robust application allows for generation, transmission, distribution, and tax charges, and can be used for steam and other commodities as well as electrical billing. It also supports detailed usage analysis in the form of usage reports and trending charts.

The E-Billing EXT™ application has three parts:

- E-Billing Settings Editor: the part of the application you use to set up billing, including customer and location configuration, data import, rate configuration, and correcting errors in the imported data.
- E-Billing Dashboard Viewer: the part of the application you use to view the Energy Dashboard, generate and view bills, view and analyze usage data, and generate and view usage reports.
- Database Server: the part of the application which provides access to the billing database.

New to this version of E-Billing EXT™ software are the following:

- Support for the MP 200 metering system
- Support for Interval Energy
- Flat Rate Only rate structure added

- Updated screens
- Dashboard Viewer for usage data analysis
- Emails can be sent with bills and usage reports
- New automated data importing and report generation for the Network version of the application
- You can now select up to four seasons and can name the seasons
- You can now view an Action log which helps you locate and address errors

1.2: Install the E-Billing EXT™ Application

E-Billing EXT™ software can be run either as a standalone program (the databases are stored on the computer that is running the application) or in a Client/Server format (the databases are stored on the Server and the application is run on the Client PCs). See your System Administrator for the setup you will be using.

NOTE: You must also have the Communicator EXT™ application installed on your PC.

The E-Billing EXT™ application must be run on a computer with one of the following operating systems:

- Windows XP® Operating System
- Windows Vista® Operating System
- Windows 7® Operating System
- Windows 8® Operating System

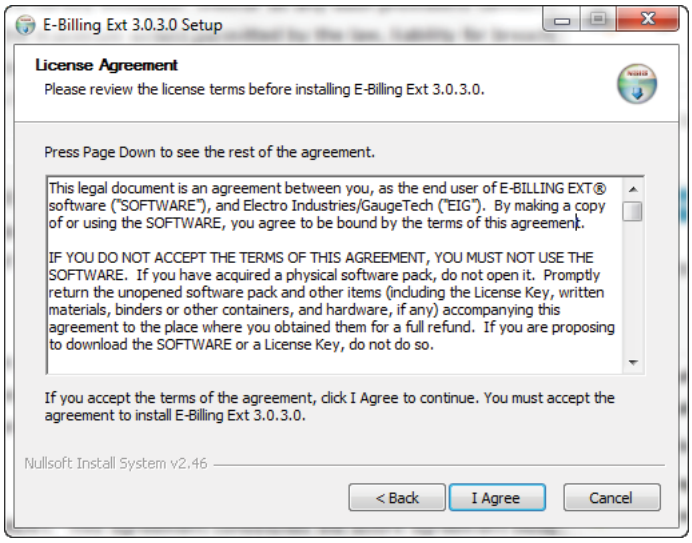
1.2.1: Installation Procedure

1. Insert the E-Billing EXT™ application's CD into your PC's CD drive. You will see the following screen in your web browser.

2. Click the Software button to open the Setup Wizard screen. See the screen below.

E-Billing Ext 3.0.3.0 Setup
Welcome to the E-Billing Ext 3.0.3.0 Setup Wizard
This wizard will guide you through the installation of E-Billing Ext 3.0.3.0.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

3. Close any open programs and click Next. You will see the screen shown below.


E-Billing Ext 3.0.3.0 Setup
License Agreement
Please review the license terms before installing E-Billing Ext 3.0.3.0.
Press Page Down to see the rest of the agreement.
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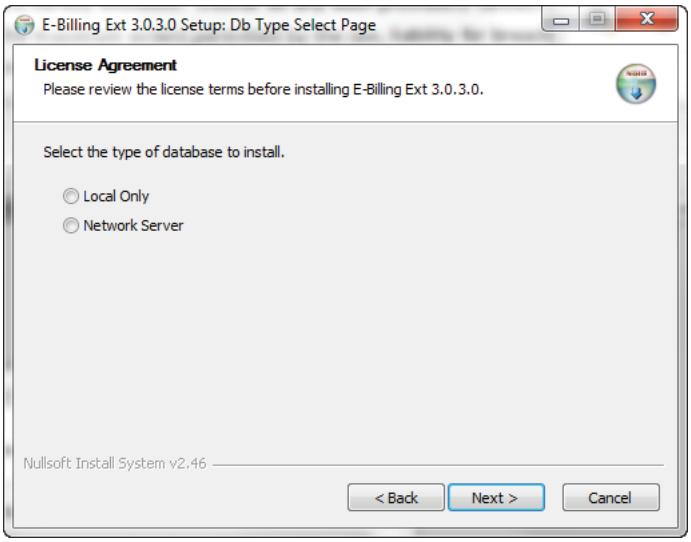
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install E-Billing Ext 3.0.3.0.
Nullsoft Install System v2.46
< Back
I Agree
Cancel

4. This is the license agreement for the E-Billing EXT™ application. Use the scroll bars or Page Down on your keyboard to view the entire agreement. If you cannot agree to the terms of the license, click Cancel to stop the installation. Otherwise, click I Agree. You will see the screen shown below.


E-Billing Ext 3.0.3.0 Setup: Db Type Select Page
License Agreement
Please review the license terms before installing E-Billing Ext 3.0.3.0.
Select the type of database to install.
Local Only
Network Server
Nullsoft Install System v2.46
< Back
Next >
Cancel

5. You have two options for the database server:

   - Local Only: the database server is installed under the current user, and is only run when the client software (E-Billing Settings Editor, E-Billing Dashboard Viewer) is run. Additionally, the database server is only accessible from the local

machine, and only by the installing user. This is primarily used when installing under restricted accounts, standalone systems or on laptops. Bills and reports must be manually generated.

- Network Server: the database server is installed under a special user, as a service. The database is accessible from other machines on port 5432, and is started when the computer starts. This is the default installation setting, and allows users on other computers to access the database. This setting requires that the installing user have permission to create users and set up services. This is a Client/Server application and as such you may need administrator help to install the software in this mode. Bills and reports are automatically generated.

The diagrams below and on the next pages show the differences between the Local and Network database server functionality.

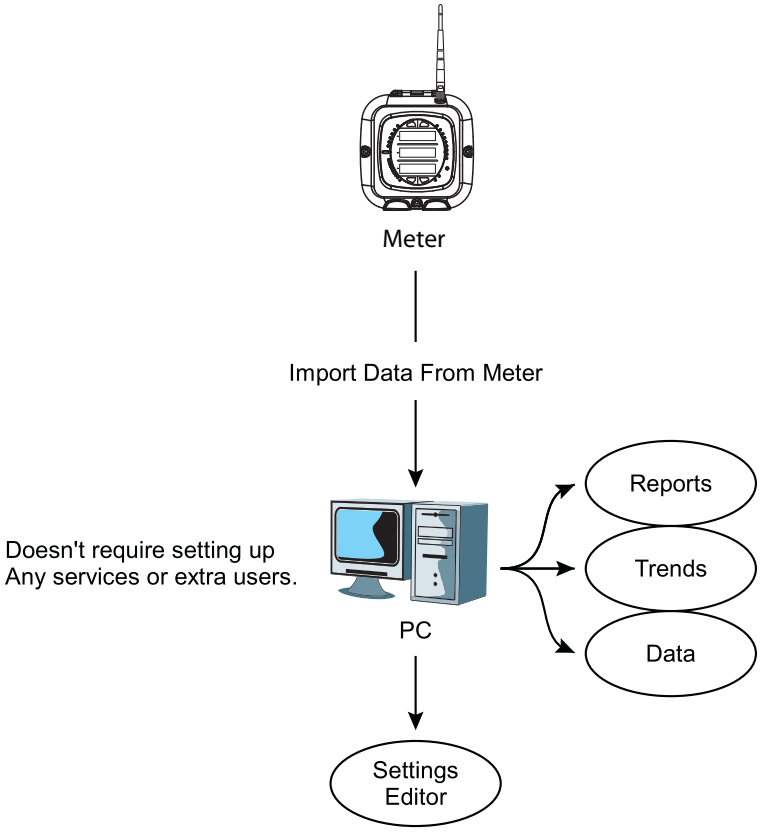


Figure 1.1: Local Database Server

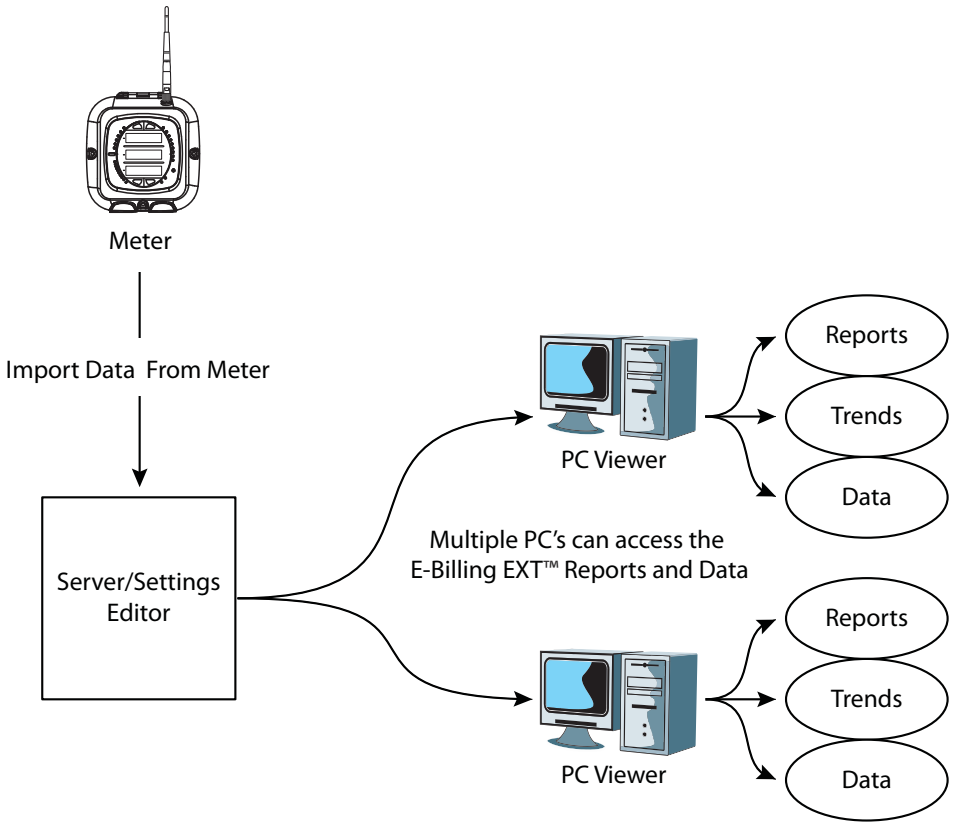
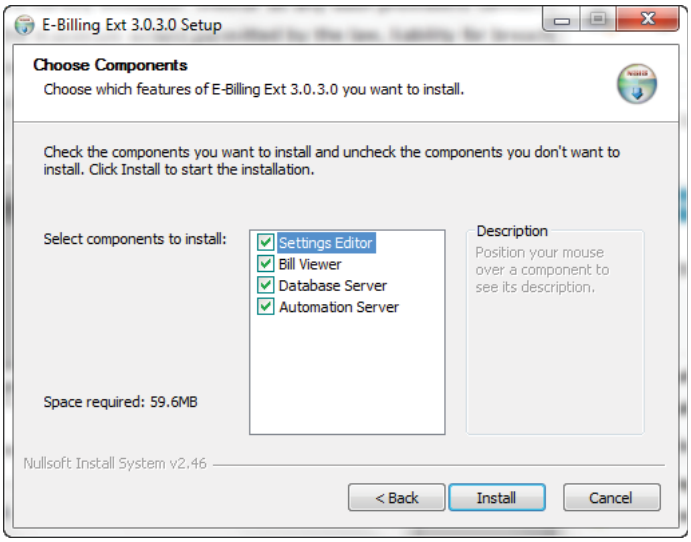


Figure 1.2: Network Database Server

6. Click Next. You will see the screen shown below.

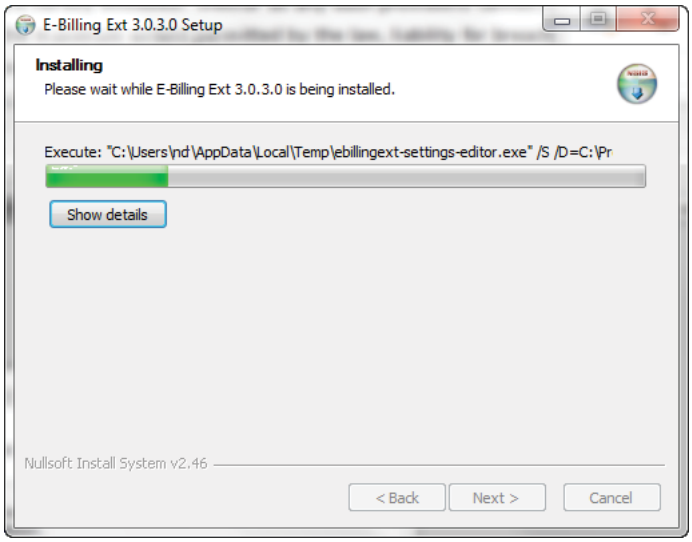

E-Billing Ext 3.0.3.0 Setup
Choose Components
Choose which features of E-Billing Ext 3.0.3.0 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Install to start the installation.
Select components to install:
Settings Editor
Bill Viewer
Database Server
Automation Server
Description
Position your mouse over a component to see its description.
Space required: 59.6MB
Nullsoft Install System v2.46
< Back
Install
Cancel

This screen lets you choose the application components you will install on the PC.

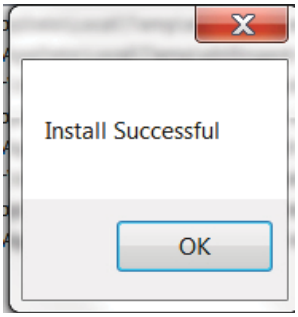
- If you are setting up this PC as a Client (the billing data will be stored on a Network database server on a different PC), check only the Bill Viewer box.
- If you are setting up this PC as a Network database server, check all four boxes.
- If you are setting up the PC in standalone mode (the application and database server will both be on the PC), check the first three boxes.

NOTE: You can also install any of the individual components by itself, but the settings explained above are the recommended settings.

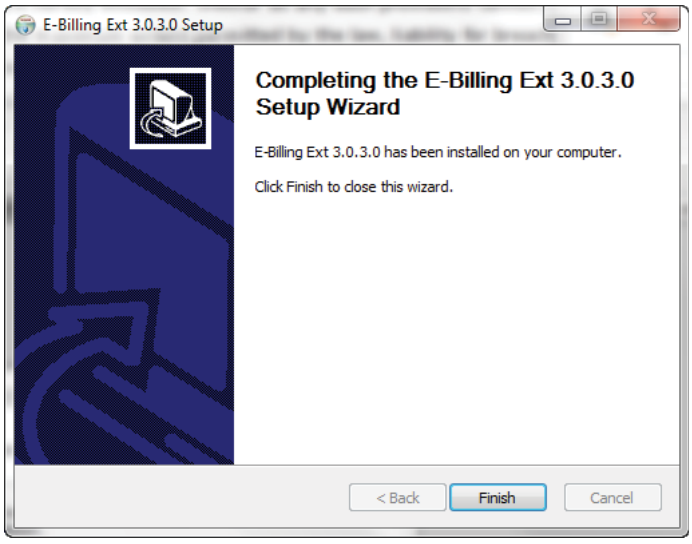
7. Click the radio button next to the setting you want and click Install. You will see the screen shown below as the software is being installed.



8. At one point during the installation, you will see the following message window.

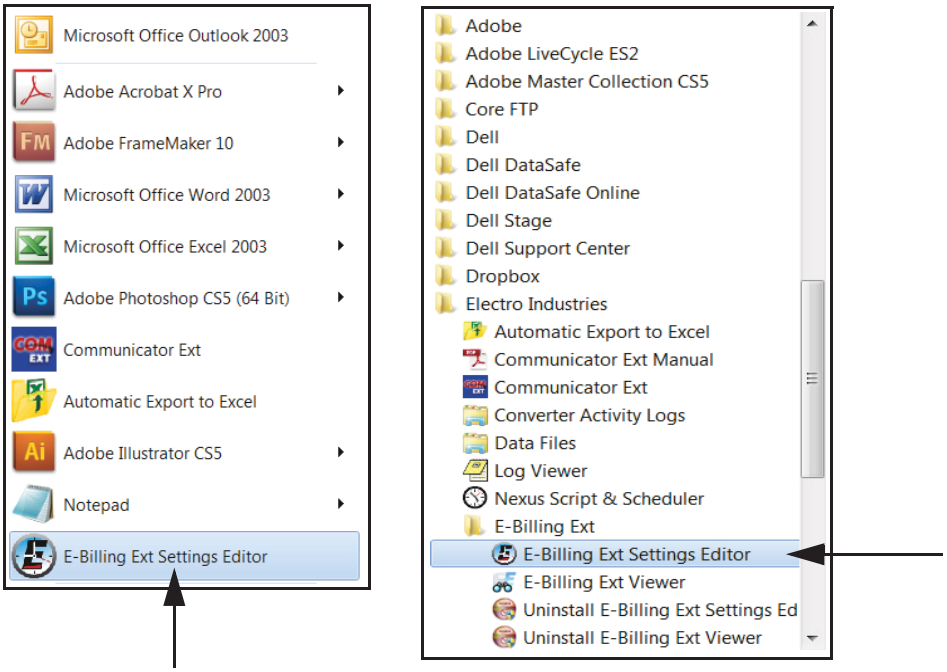


9. Click OK. You will see the screen shown below.


E-Billing Ext 3.0.3.0 Setup
Completing the E-Billing Ext 3.0.3.0 Setup Wizard
E-Billing Ext 3.0.3.0 has been installed on your computer.
Click Finish to close this wizard.
< Back
Finish
Cancel

10. Click Finish to close the Setup Wizard.

11. To run the application, select it from the Start menu. See the example screens below.



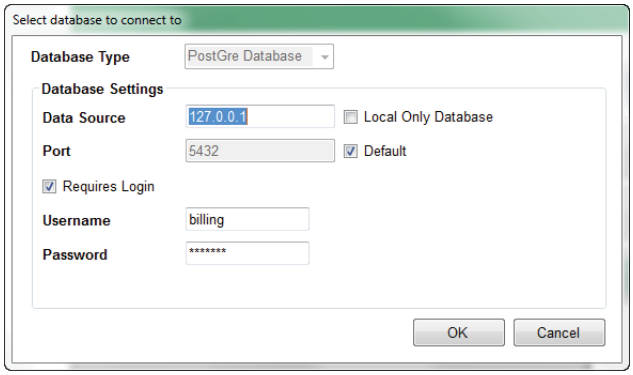
1.3: Connect to the Database Server

If you are running the E-Billing EXT™ application on a PC that is not the database server, or does not have the database files you want to use, you need to specify where the application can find the database files you need.

1.3.1: Specify the Database Server

When you open the E-Billing EXT™ application's E-Billing Bill Settings Editor, the application tries to connect to the database on the PC you are using. If the database is not found, for instance, if you have set up the Network database sever (see Section 1.2.1, step 6) and you are on a Client PC (which is a PC other than the Network server), you will see a screen with the Configure System icon. Click the icon to open the screen shown below.

NOTE: If you set up the Local Only database server (see Section 1.2.1, step 5) on the PC you are using, you do not need to change anything, unless you want to use a billing database that is stored on another PC. If that is the case, click File>Connect to Database from the E-Billing Settings Editor Title bar and continue with the instructions below.



1. Enter the information for the database server (the settings above are examples, only):

   - Database Type: EIG is only supporting a PostGre database for its database type.
   - Data Source: the database server's IP address. If the database is configured as Local Only (see Section 1.2.1, step 5) make sure the Local Only Database checkbox is selected.

- Port: the port to connect to the server on. By default, the port is 5432, which displays when you click the Default checkbox.

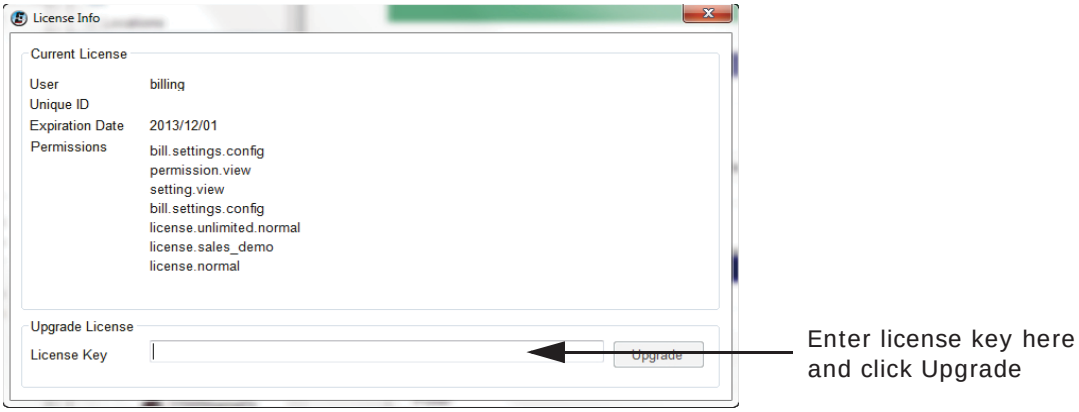
- Requires Login: Leave this box checked.

2. Click the OK button to process your entries. The software connects to the specified database.

1.4: Enter a Software License Key

When you first use the E-Billing EXT™ application, you need to enter the software license key that lets you use the full version of the application (the Demo version lets you set up only one location and does not perform the automatic check for updates).

1. From the E-Billing Settings Editor, click Help>Upgrade User License. You will see the screen shown below.



2. Contact EIG's inside sales staff at sales@electroind.com. In the email give your name, company name and the Unique ID code shown in the License Info screen. You will receive a reply email with the software license key.

3. Enter the software license key and click the Upgrade button. The software will be upgraded to the full version of the application.

1.5: Steps for Using the E-Billing EXT™ Application

As mentioned at the beginning of this chapter, the E-Billing EXT™ application generates bills using either Communicator EXT™ log databases or the polling engine of the HMI EXT™ application. (Because the HMI EXT™ application is specifically configured for each customer site, data setup for the E-Billing EXT™ application is done when the HMI EXT™ application is installed and configured by a certified system integrator.)

You already performed Step 1 in this chapter. You need to perform the following steps in order to set up the database files to be used for Energy and other commodity logging, and to use the E-Billing EXT™ application to generate usage reports and bills:

Step 2 - Using the Communicator EXT™ application, configure your meter(s) to log the values you want to use for Energy and other commodity logging. These values can be any Energy value, e.g., Watt-hours Received, or pulse accumulator, e.g., a Digital Input (for the Shark® 200S meter only, you can log Energy but not pulse accumulations as it does not have Digital Inputs). The instructions for this step are in Chapter 2.

Step 3 - Using the Communicator EXT™ application, run initial log downloads for your meters. This step is necessary to get the basic log data from the Communicator EXT™ application into the E-Billing EXT™ Database server. The instructions for this step are in Chapter 3.

Step 4 - Set up the Script & Scheduler™ application to retrieve the meter logs on a regular basis, e.g., every 12 hours, and convert them into the log database files that the E-Billing EXT™ application needs for generating your customer bills. The instructions for this step are in Chapter 4.

Step 5 - Configure the E-Billing EXT™ application settings: provider, customer, customer locations, rate structures, meters at location. The instructions for this step are in Chapter 5.

Step 6 - Data importing from the log database files to the E-Billing EXT™ Database server. If you are using the Network server setup, data importing is automatic. If you are running the Local Only setup, you can set up automatic importing of data through Windows® Task Scheduler. The instructions for this step are in Chapter 6, along with instructions for viewing and correcting data errors.

Step 7 - Use the Generate All Bills command to generate bills for all of your locations. The instructions for this step are in Chapter 7.

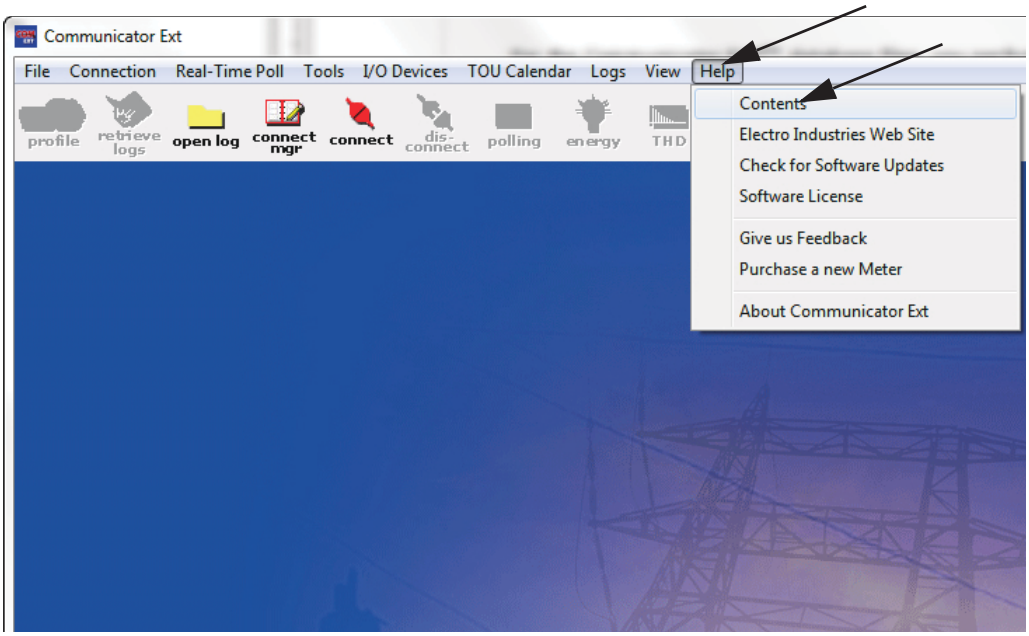
Step 8 - Use the imported data to generate usage reports and trending. The instructions for this step are in Chapter 8.

Chapter 9 - View the Action log, and learn additional tips and advanced options.

2: Step 2 - Set Up Communicator EXT™ Logging

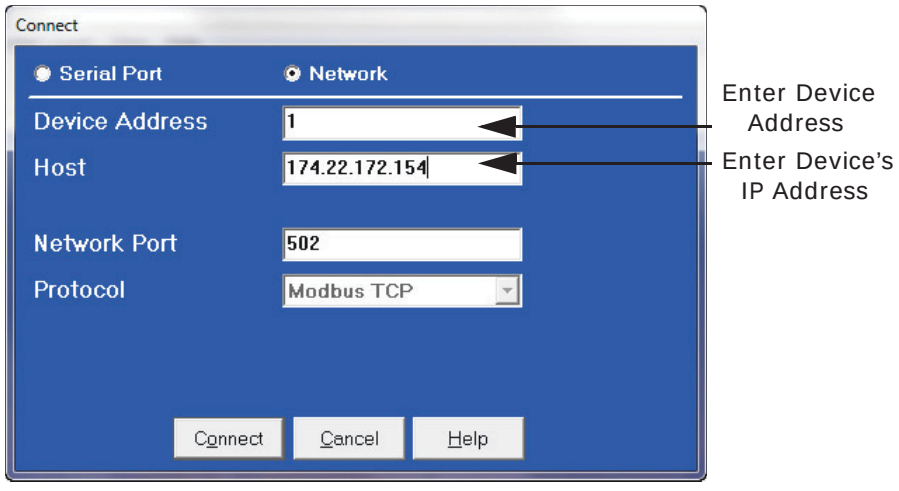
You set up Energy, Energy in the Interval, and other Commodity logging in the meter's Device Profile.

NOTE: The basic steps are given here. For more detailed information, consult the *Communicator EXT™ User Manual* (you can access the manual online by clicking Help>Contents in the Communicator EXT™ Title Bar).

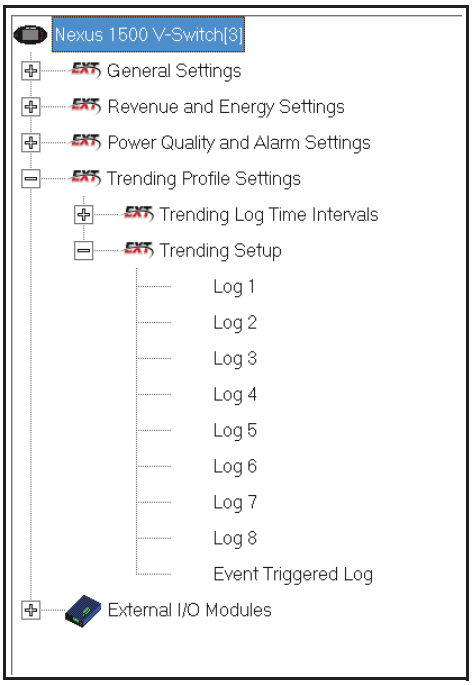


1. Open the Communicator EXT™ application by clicking Start>All Programs>Electro Industries>Communicator EXT. You will see the screen shown above.

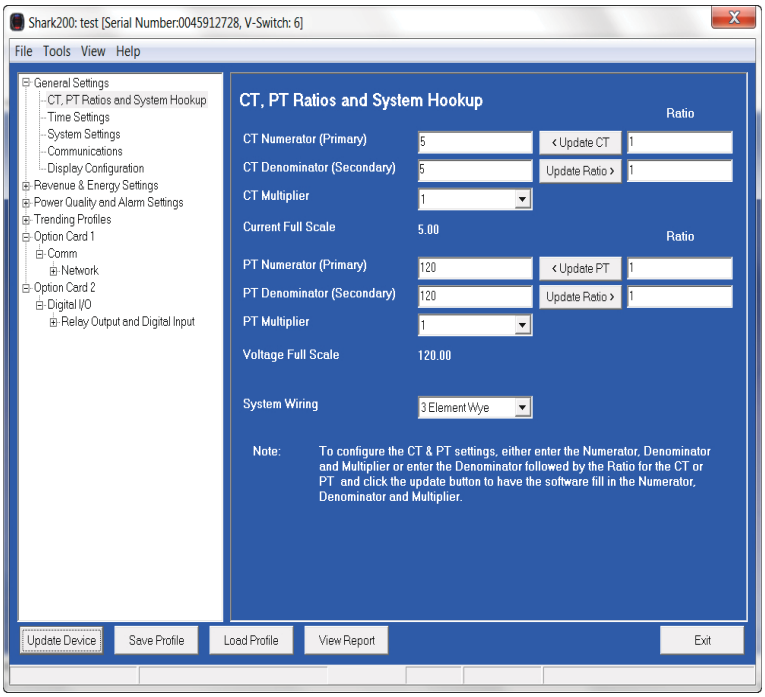
2. Click the Connect icon in the Title bar to connect to the meter you are setting up. See the example screen below.



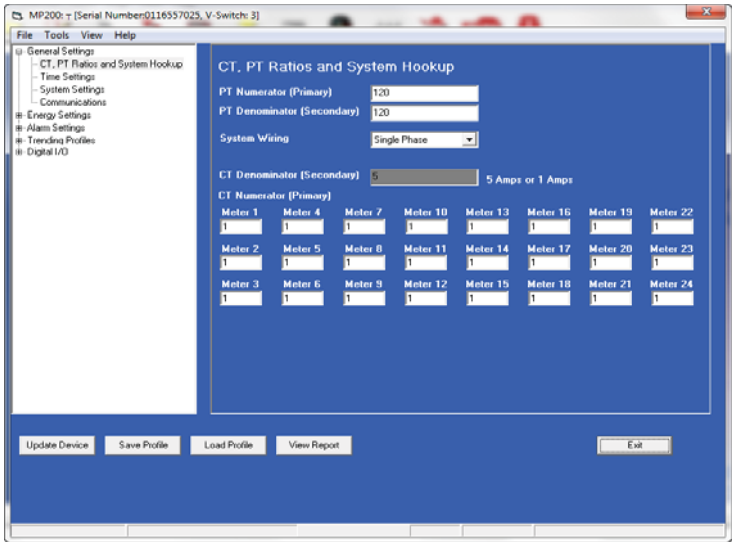
3. From the Communicator EXT™ main screen, click the Profile icon. The Device Profile screen for the meter opens. See the example screens, shown below.



Nexus® 1500 Meter Device Profile



Shark® 200 Meter Device Profile



MP200 Metering System Device Profile
(this screen capture is from an MP200-S unit, the single phase circuit configuration)

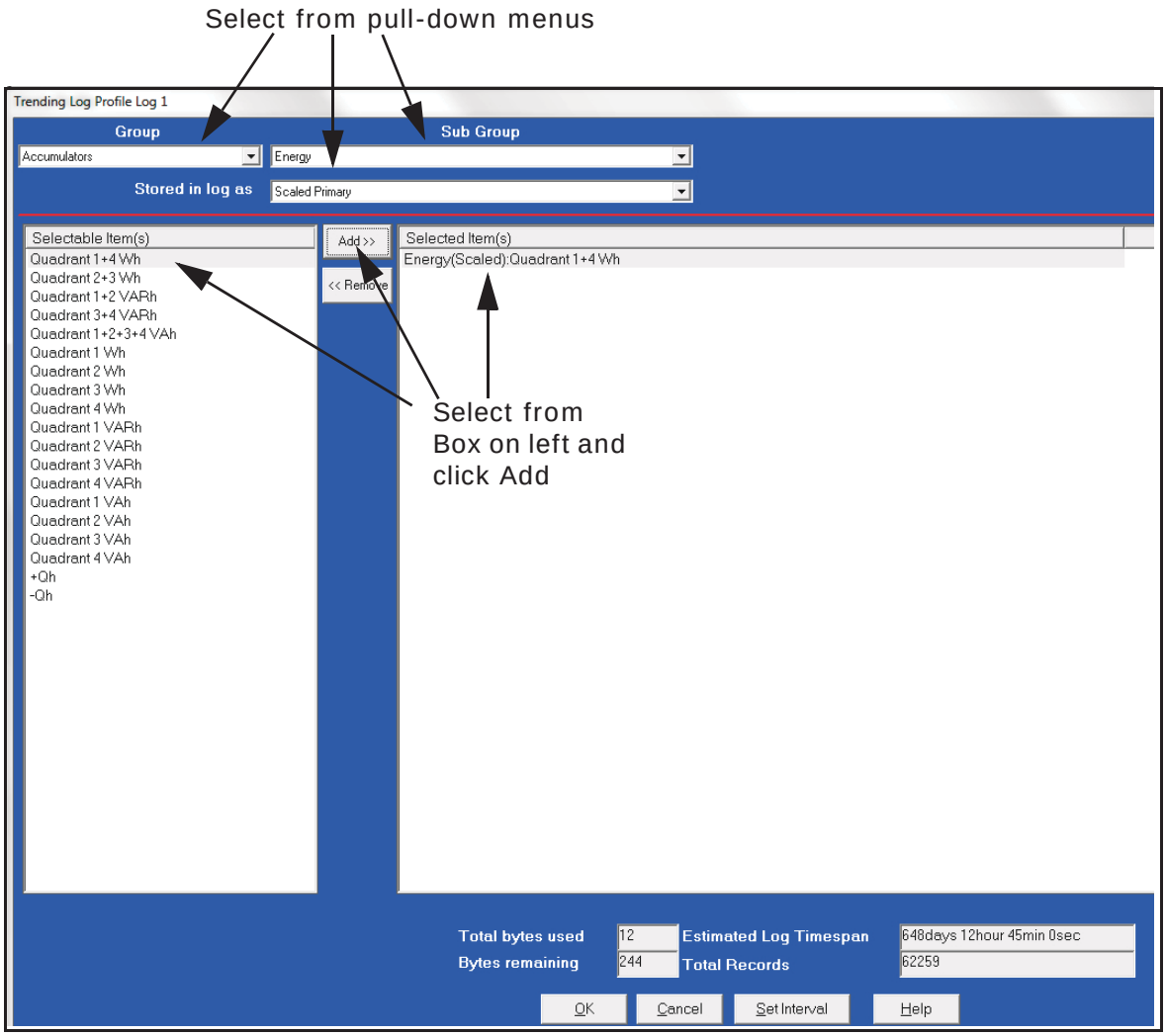
4. For the Shark® meters and the MP200 metering system, click on the + sign next to Trending Profiles; for the Nexus® meters, click the + sign next to Trending Profile Settings and then the + sign next to Trending Setup. You will see a list of historical (trending) logs.

5. Double-click on the log you want to use. You will see a screen that lets you select the values you want to log. See the screens below and on the next few pages for the most commonly used Energy, Energy in the Interval, and other Commodity logging settings for the Nexus®, Shark®, and MP200 meters. You can also refer to the table on page 2-11.

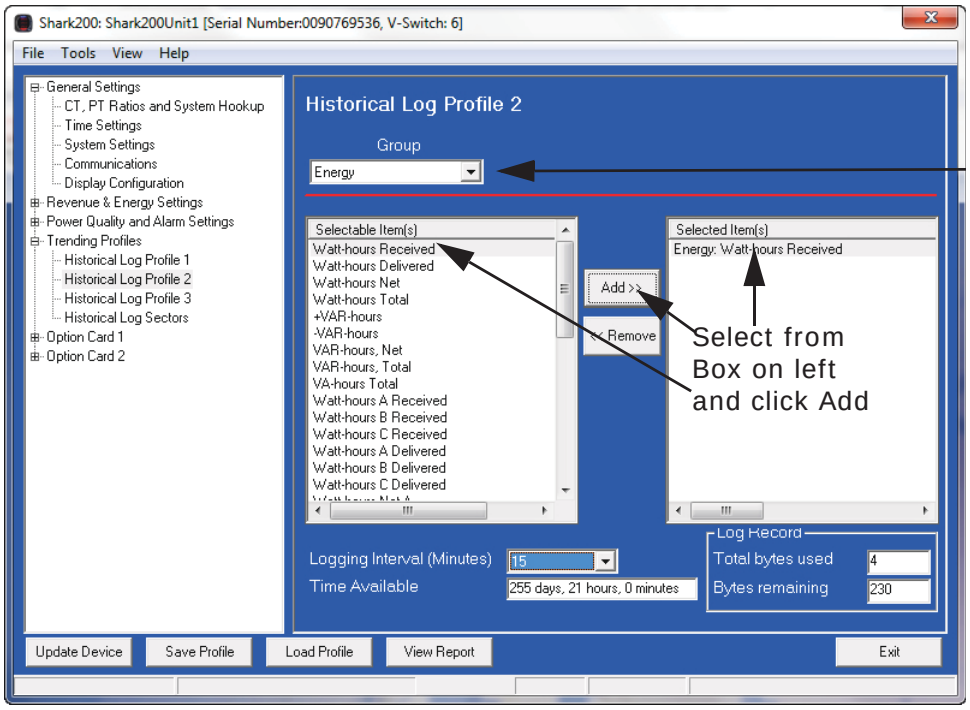
   NOTE: For the MP200 metering system there is only one historical log for use with the E-Billing EXT™ application - either historical log 2 for the MP200-Y three phase configuration or historical log 3 for the MP200-S single phase configuration. The log is pre-configured with the data points you need for logging.

Energy Logging Settings

For the Nexus® 1252/1262/1272/1500 meters we recommend the settings shown below for Energy logging.



For the Shark® 200/200S meters we recommend the settings shown in the screen below for Energy logging.

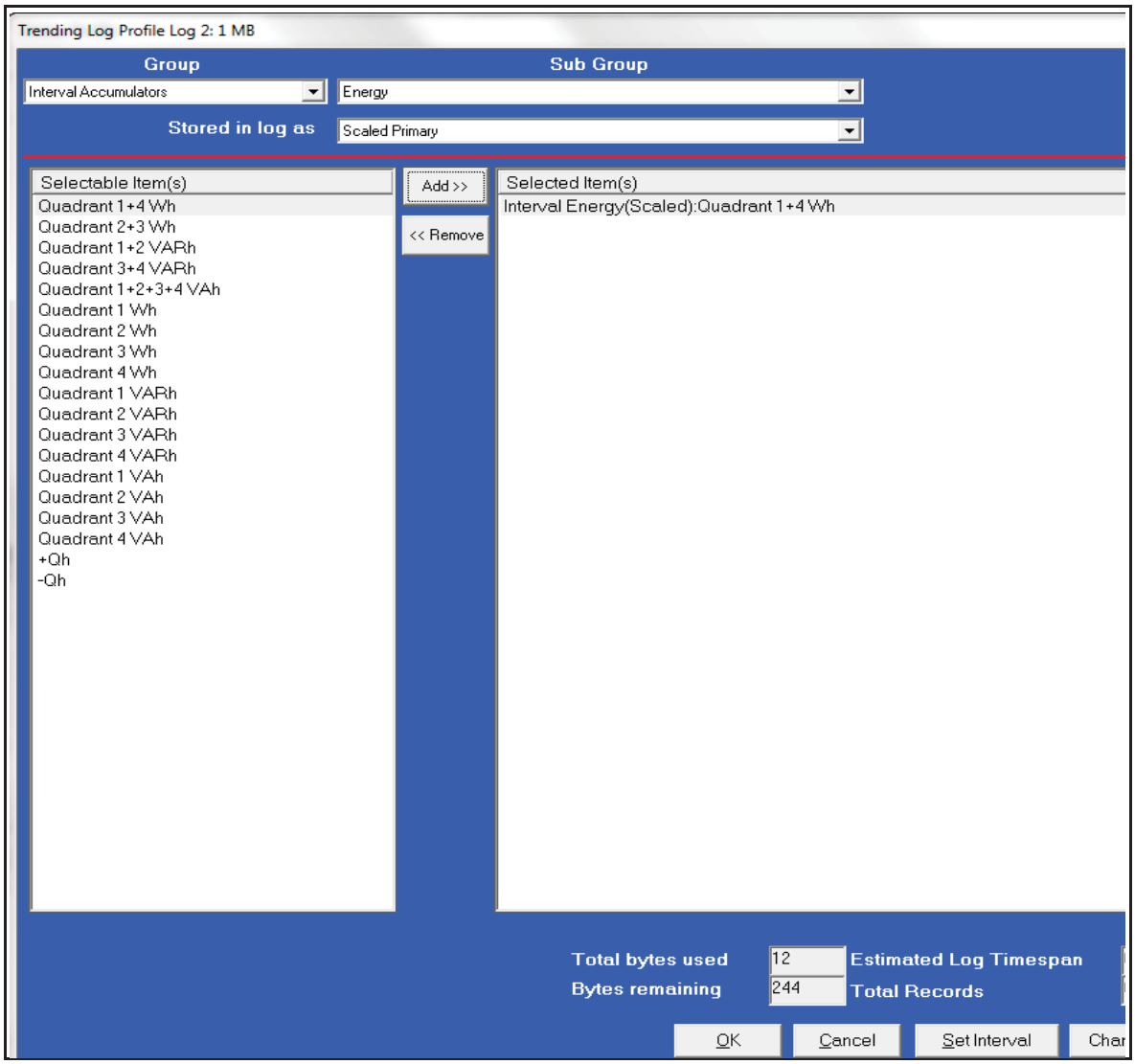


NOTES:

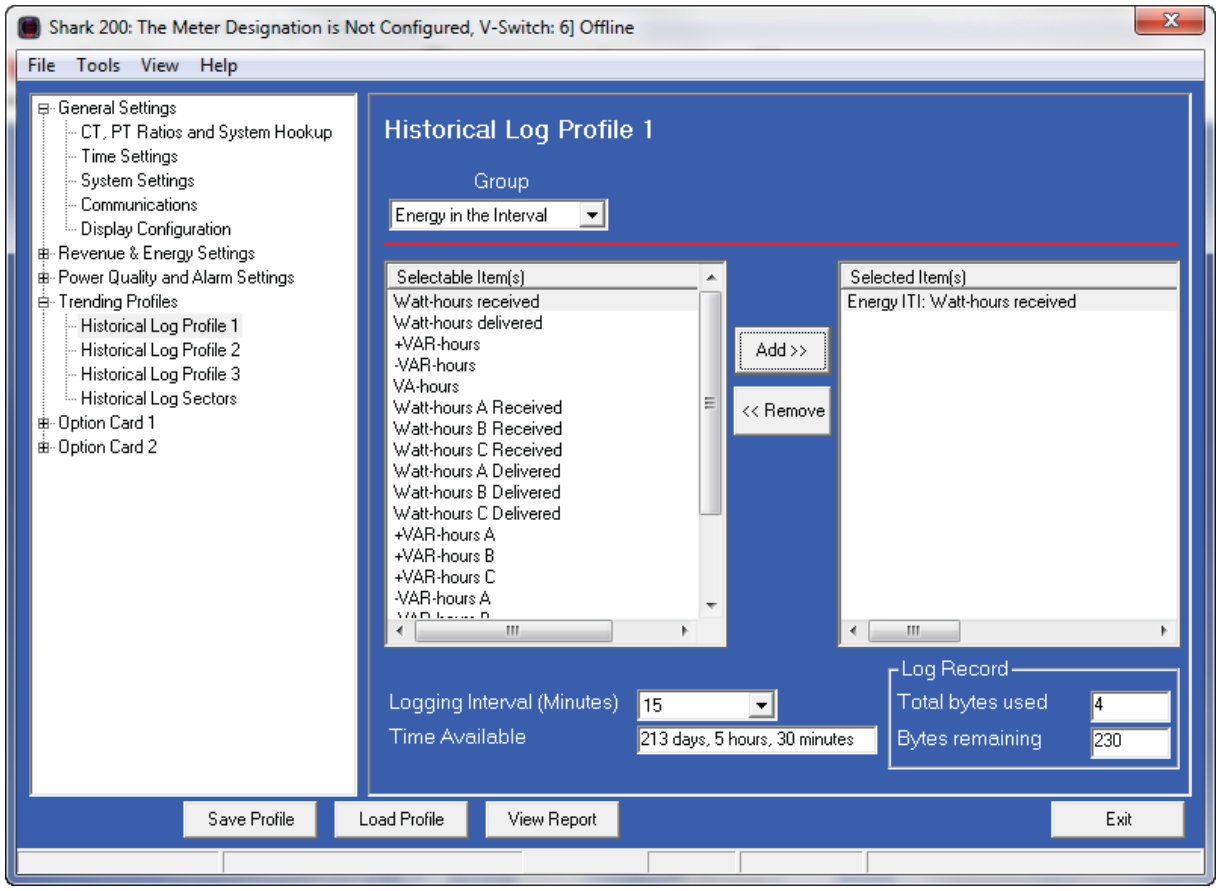
- The MP200 metering system has Energy in the Interval logging, but not Energy logging.
- The logging interval must be 15 minutes, and the energy interval (Demand Averaging interval) must also be 15 minutes.

Energy in the Interval Logging Settings

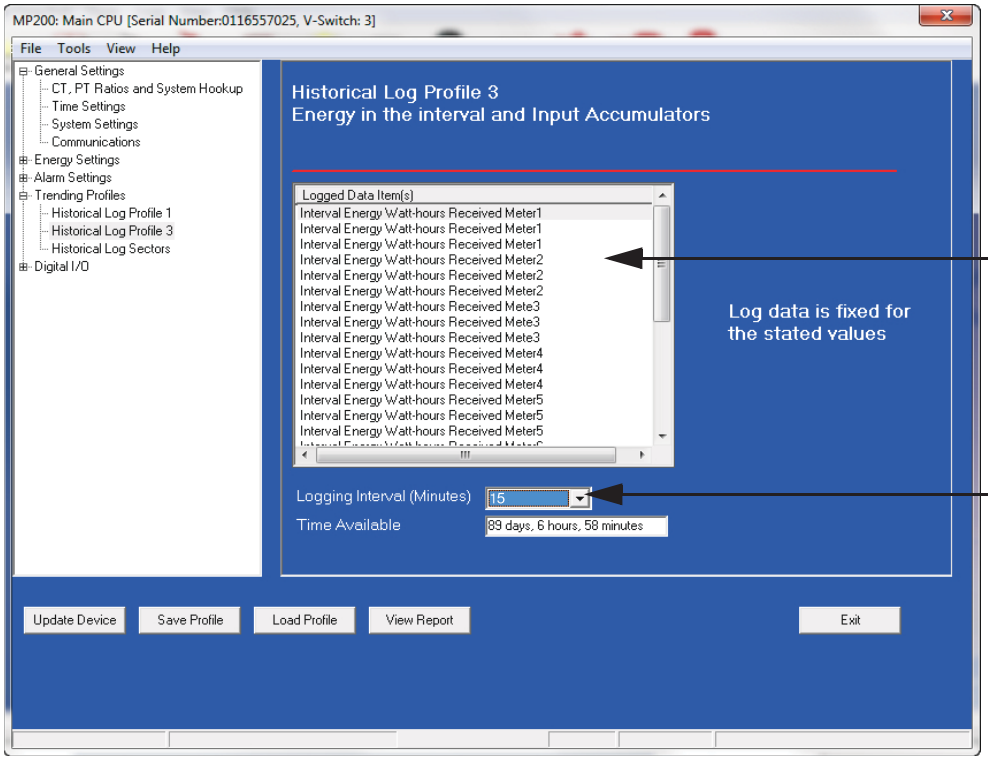
For the Nexus® 1252/1262/1272/1500 meters we recommend the settings shown below for logging Energy in the Interval.



For the Shark® 200/200S meters we recommend the settings shown in the screen below for logging Energy in the Interval.



The MP200 metering system's historical logs 2 (MP200-Y) and 3 (MP200-S) are pre-configured to log Energy in the Interval. The only thing you can select for them is the logging interval, which should be set at 15 minutes.


MP200: Main CPU [Serial Number:0116557025, V-Switch: 3]
File Tools View Help
General Settings
CT, PT Ratios and System Hookup
Time Settings
System Settings
Communications
Energy Settings
Alarm Settings
Trending Profiles
Historical Log Profile 1
Historical Log Profile 3
Historical Log Sectors
Digital I/O
Historical Log Profile 3
Energy in the interval and Input Accumulators
Logged Data Item(s)
Interval Energy Watt-hours Received Meter1
Interval Energy Watt-hours Received Meter1
Interval Energy Watt-hours Received Meter1
Interval Energy Watt-hours Received Meter2
Interval Energy Watt-hours Received Meter2
Interval Energy Watt-hours Received Meter2
Interval Energy Watt-hours Received Mete3
Interval Energy Watt-hours Received Mete3
Interval Energy Watt-hours Received Mete3
Interval Energy Watt-hours Received Meter4
Interval Energy Watt-hours Received Meter4
Interval Energy Watt-hours Received Meter4
Interval Energy Watt-hours Received Meter5
Interval Energy Watt-hours Received Meter5
Interval Energy Watt-hours Received Meter5
Log data is fixed for the stated values
Logging Interval (Minutes) 15
Time Available 89 days, 6 hours, 58 minutes
Update Device
Save Profile
Load Profile
View Report
Exit

The logging fields are pre-configured and can't be changed

Make sure the Logging Interval is 15 minutes

6. For all meters except the MP200, use the pull-down menu(s) at the top of the screen to display the available logging values. The values are listed in the box on the left.

   - For the Nexus® 1252/1262/1272/1500 meters, for logging Energy we recommend you select Accumulators for Group, Energy for Sub-Group, and Scaled Primary for Stored in Log As (use the pull-down menus); for logging Energy in the Interval we recommend you select Interval Accumulators for Group, Energy for Sub-Group, and Scaled Primary for Stored in Log As.

   - For the Shark® 200/200S meters, for logging Energy we recommend you select Energy for Group (use the pull-down menu); for logging Energy in the Interval we recommend you select Energy in the Interval for Group.

7. To select an Energy value for trending (not applicable to MP200, whose logging is preset), click on it in the box and click Add to move it to the box on the right.

   - For the Nexus® 1252/1262/1272/1500 meters we recommend you select (for both Energy and Energy in the Interval logging) Quadrant 1+4 Wh.

- For the Shark® 200/200S meters we recommend you select (for both Energy and Energy in the Interval logging) Watt-hours Received.

  NOTE: To remove an item you don't want to log from the box on the right, click on the Item and then click the Remove button.

8. To log values for commodities other than Energy, for example, gas or steam (not applicable to MP200, whose logging is preset):

   - For the Nexus® 1252/1262/1272/1500 meters select Internal Pulse Accumulations for Group and Aggregations for Sub-Group (from the pull-down menu). Then select whichever Input is recording accumulations from the pulse meter measuring the gas or steam.

   - For the Shark® 200/200S meters, select Accumulators for Group (from the pull-down menu). Then select whichever Input is recording accumulations from the pulse meter measuring the gas or steam.

     Refer to the following diagram and screens.

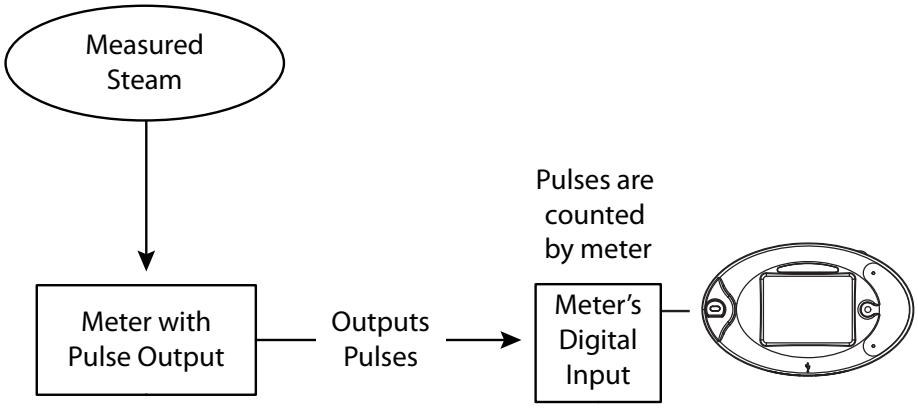
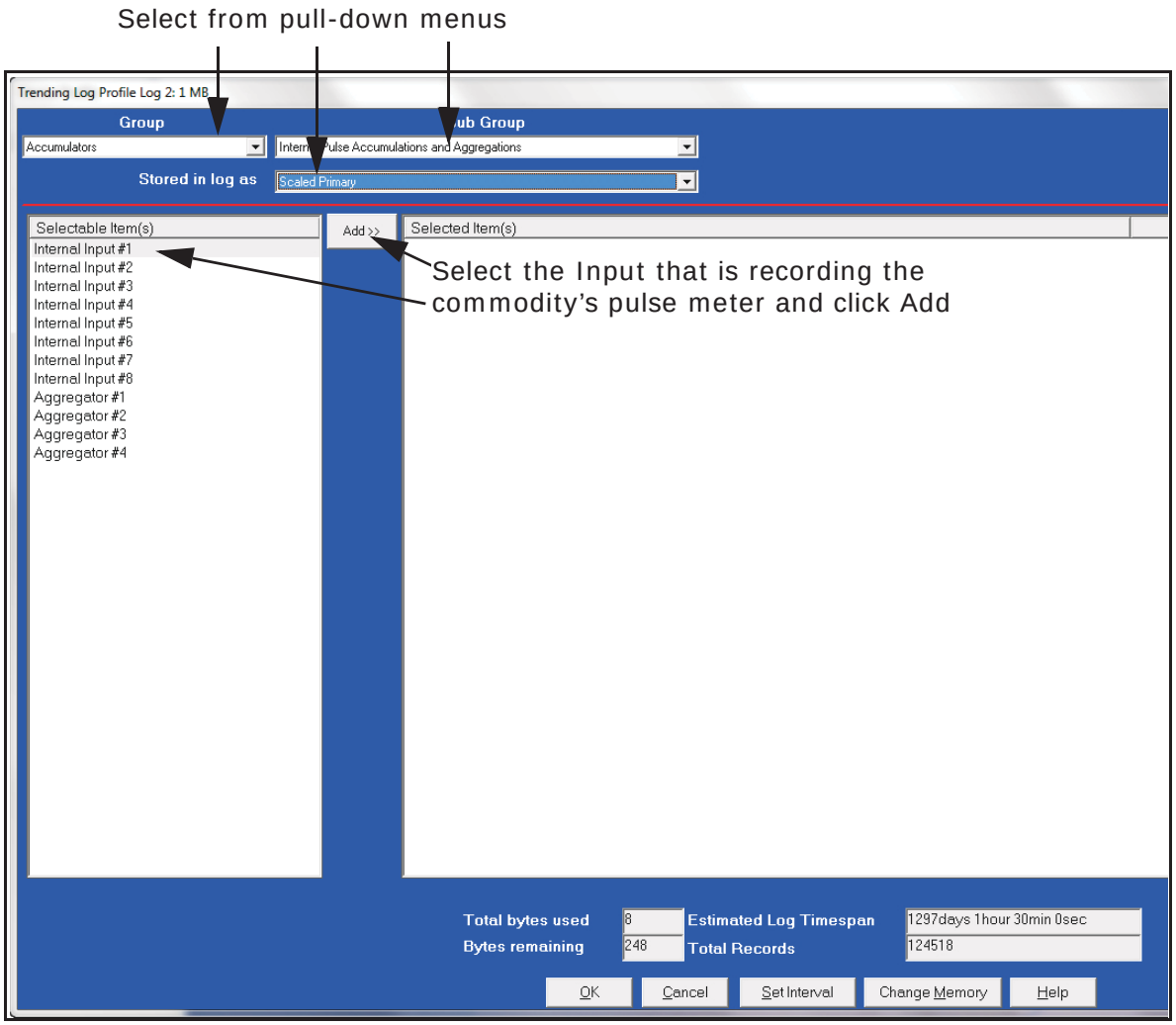


Figure 2.1: Example of How the Meter Measures Non-Energy Commodities

NOTE: Most commodities are measured in this fashion. A pulse output is the industry standard method of measuring usage on any parameter, whether electric, gas, condensate, or anything else.
EIG meters natively measure electricity, but also have the capability to report on

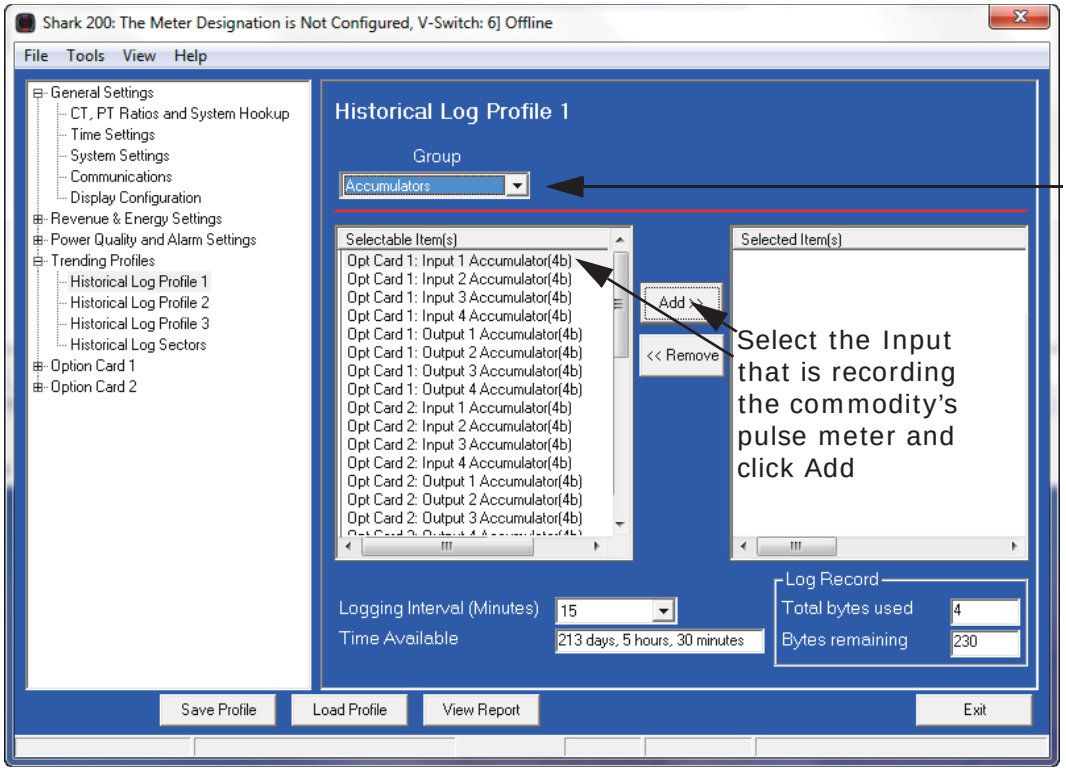
usage from other commodities by using the pulse generated by these other types of meters.

For the Nexus® meters we recommend the settings shown in the screen below for logging commodities other than Energy.



NOTE: With Nexus® meters, each meter can count up to 8 different pulses at differing speeds. Each of these inputs can be mapped to a different commodity. The Shark® 200 meter can perform a similar function; it has 4 inputs maximum per Option card, with a 2 card maximum per meter.

For the Shark® 200 meter we recommend the settings shown in the screen below for logging commodities other than Energy.



The MP200 meter's Log 2 and Log 3 are pre-configured for commodity logging.

9. The E-Billing EXT™ application uses 15 minute intervals - make sure the log's Interval is 15 minutes. For the Nexus® meters, click the Set Interval button to open a Logging Interval window; for the Shark® meters and MP200 metering system, select the Interval from the pull-down menu at the bottom of the Log Profile screen. Note that the energy interval (Demand Averaging interval) must also be 15 minutes.

10. When you are done, click OK to close the window. You can repeat this procedure to set up additional logs.

11. From the Device Profile screen, click Update Device to send the new profile to the meter.

    NOTE: If you already set up logs for this meter or changed other settings, updating the Device Profile will reset all of the logs. The application gives you a chance to retrieve the logs before they are reset.

Table of Settings for Logging Energy, Energy in the Interval, and Commodity

Meter	Group / Sub-group			Data Point		
	Energy	Interval Energy	Commodity	Energy	Interval Energy	Commodity
Shark	Energy	Energy in the Interval	Accumulators	Watt-hours Received	Watt-hours Received	Input used for accumulation
Nexus	Accumulators / Energy/ Scaled Primary	Interval Accumulators / Energy/ Scaled Primary	Internal Pulse Accumulation /Aggregations	Quadrant 1+4 Wh	Quadrant 1+4 Wh	Input used for accumulation
MP200	Pre-configured in Log 2 (MP200-Y) or Log 3 (MP200-S)					

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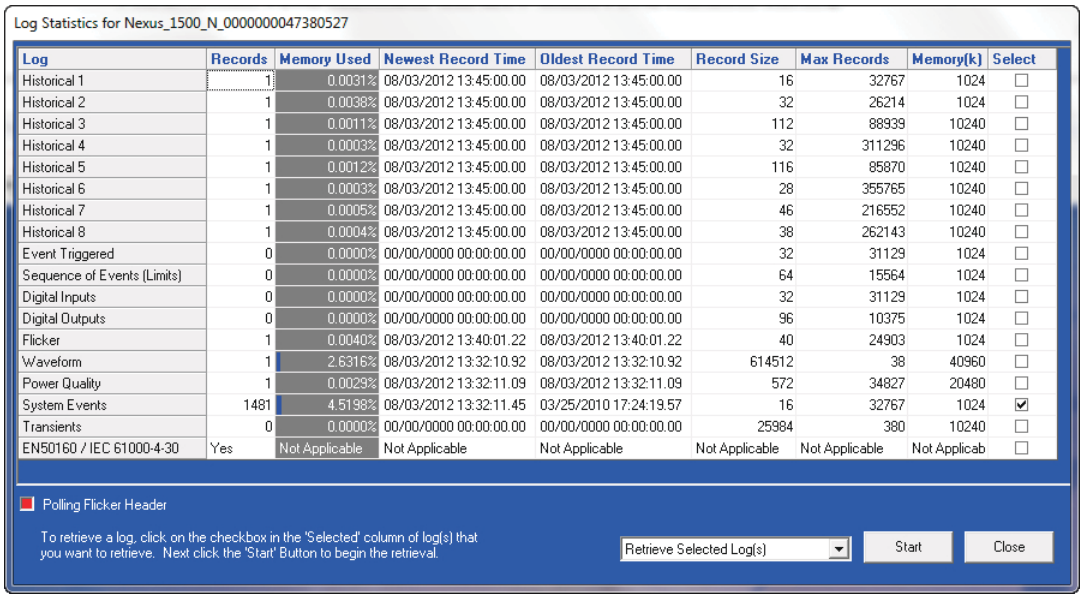
3: Step 3 - Initial Download of Meter Logs

Perform an initial download of the meter's logs to get the basic log data from the Communicator EXT™ application into the E-Billing EXT™ Database server.

1. From the Communicator EXT™ main screen's Title bar, click either Logs>Retrieve Log(s) from Device or the Retrieve Logs icon. You will see a screen similar to the one shown below (different meters have slightly different screens, but they all allow you to select logs for download).


Log Statistics for Nexus_1500_N_0000000047380527
Polling Flicker Header
To retrieve a log, click on the checkbox in the 'Selected' column of log(s) that you want to retrieve. Next click the 'Start' Button to begin the retrieval.
Retrieve Selected Log(s)
Start
Close

Log	Records	Memory Used	Newest Record Time	Oldest Record Time	Record Size	Max Records	Memory(k)	Select
Historical 1	1	0.0031%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	16	32767	1024	☐
Historical 2	1	0.0038%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	32	26214	1024	☐
Historical 3	1	0.0011%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	112	88939	10240	☐
Historical 4	1	0.0003%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	32	311296	10240	☐
Historical 5	1	0.0012%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	116	85870	10240	☐
Historical 6	1	0.0003%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	28	355765	10240	☐
Historical 7	1	0.0005%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	46	216552	10240	☐
Historical 8	1	0.0004%	08/03/2012 13:45:00.00	08/03/2012 13:45:00.00	38	262143	10240	☐
Event Triggered	0	0.0000%	00/00/0000 00:00:00.00	00/00/0000 00:00:00.00	32	31129	1024	☐
Sequence of Events (Limits)	0	0.0000%	00/00/0000 00:00:00.00	00/00/0000 00:00:00.00	64	15564	1024	☐
Digital Inputs	0	0.0000%	00/00/0000 00:00:00.00	00/00/0000 00:00:00.00	32	31129	1024	☐
Digital Outputs	0	0.0000%	00/00/0000 00:00:00.00	00/00/0000 00:00:00.00	96	10375	1024	☐
Flicker	1	0.0040%	08/03/2012 13:40:01.22	08/03/2012 13:40:01.22	40	24903	1024	☐
Waveform	1	2.6316%	08/03/2012 13:32:10.92	08/03/2012 13:32:10.92	614512	38	40960	☐
Power Quality	1	0.0029%	08/03/2012 13:32:11.09	08/03/2012 13:32:11.09	572	34827	20480	☐
System Events	1481	4.5198%	08/03/2012 13:32:11.45	03/25/2010 17:24:19.57	16	32767	1024	☑
Transients	0	0.0000%	00/00/0000 00:00:00.00	00/00/0000 00:00:00.00	25984	380	10240	☐
EN50160 / IEC 61000-4-30	Yes	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicab	☐

2. Click the checkbox for the log you set up for Energy/commodity logging and click the Start button.

3. You will see messages as the log is being downloaded.

4. Repeat this process for additional meters. Once the process is done, you can close the Communicator EXT™ application. This is important to do for each meter you configure because it initially sets up the database so that the user will be able to attach it to the E-Billing EXT™ application, and allows you to verify that the logs were configured correctly.

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4: Step 4 - Set Up Automatic Log Downloads with the Script & Scheduler™ Application

The diagram below depicts the entire automated log download and import data process for the E-Billing EXT™ application.

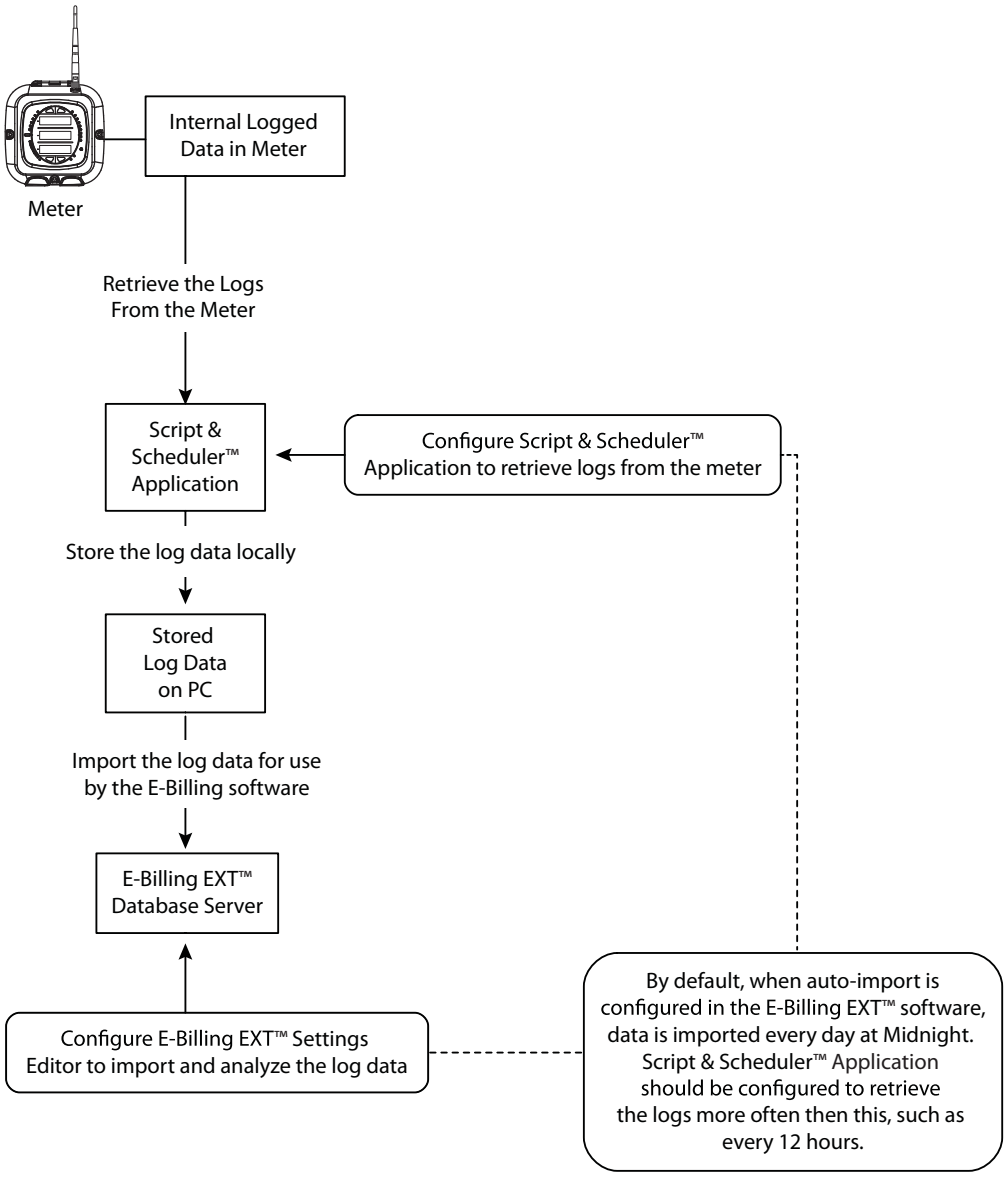

Meter
Internal Logged Data in Meter
Retrieve the Logs From the Meter
Script & Scheduler™ Application
Configure Script & Scheduler™ Application to retrieve logs from the meter
Store the log data locally
Stored Log Data on PC
Import the log data for use by the E-Billing software
E-Billing EXT™ Database Server
Configure E-Billing EXT™ Settings Editor to import and analyze the log data
By default, when auto-import is configured in the E-Billing EXT™ software, data is imported every day at Midnight. Script & Scheduler™ Application should be configured to retrieve the logs more often then this, such as every 12 hours.

Figure 4.1: Automated Log Download and Data Import

NOTE: Automatic import is only available if you are running the software with a Network server. If you are running it in standalone mode, you must use Windows Task Manager to automate data import (see Chapter 6 for instructions).

As shown in the diagram, the Communicator EXT™ application is the download engine for collecting data from a meter. The Script & Scheduler™ application is the mechanism used by the Communicator EXT™ application to automatically collect data from every meter within the system. The Script & Scheduler™ application serves as a stand-alone module for the Communicator EXT™ software package. It is automated data retrieving and processing software.

You will use the Script & Scheduler™ application to automatically download the billing log data which you set up through the Communicator EXT™ software. You do this by setting up the Script & Scheduler™ application to download the logs containing the billing data from your billing meters at programmed intervals. After the log data is downloaded, the Log Converter application changes the data into the correct format for the log database (this happens automatically within the software).

NOTE: You should set up the Script & Scheduler™ application to download the logs more often than you will be importing them into the E-Billing EXT™ application. The reason for this is that downloading logs from many meters can take a long time, and you need to download all of the relevant data before you import the data and generate bills from it. For example, if you are importing meter data once a day, we recommend you schedule the log downloads twice a day (every 12 hours).

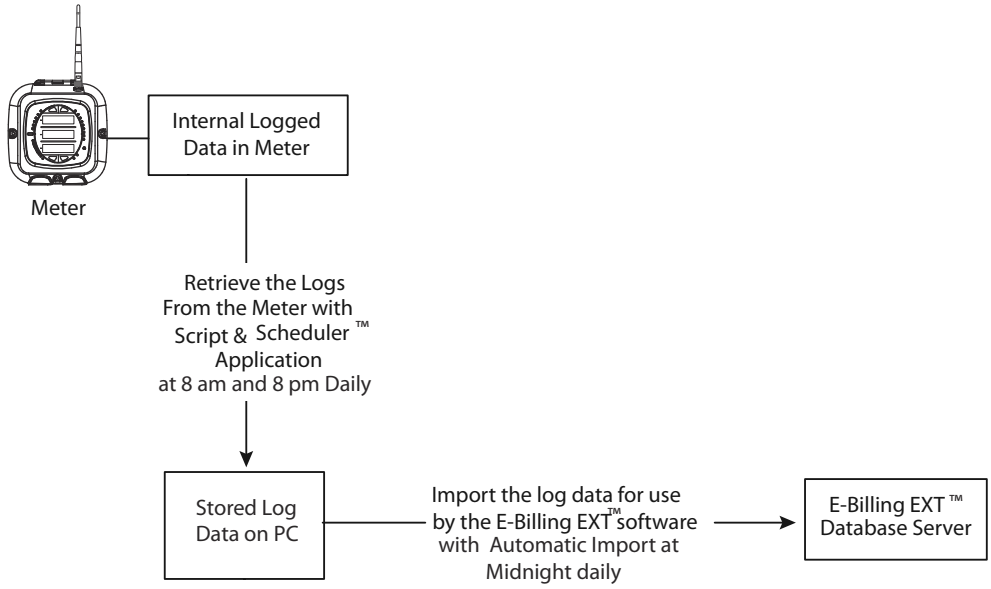
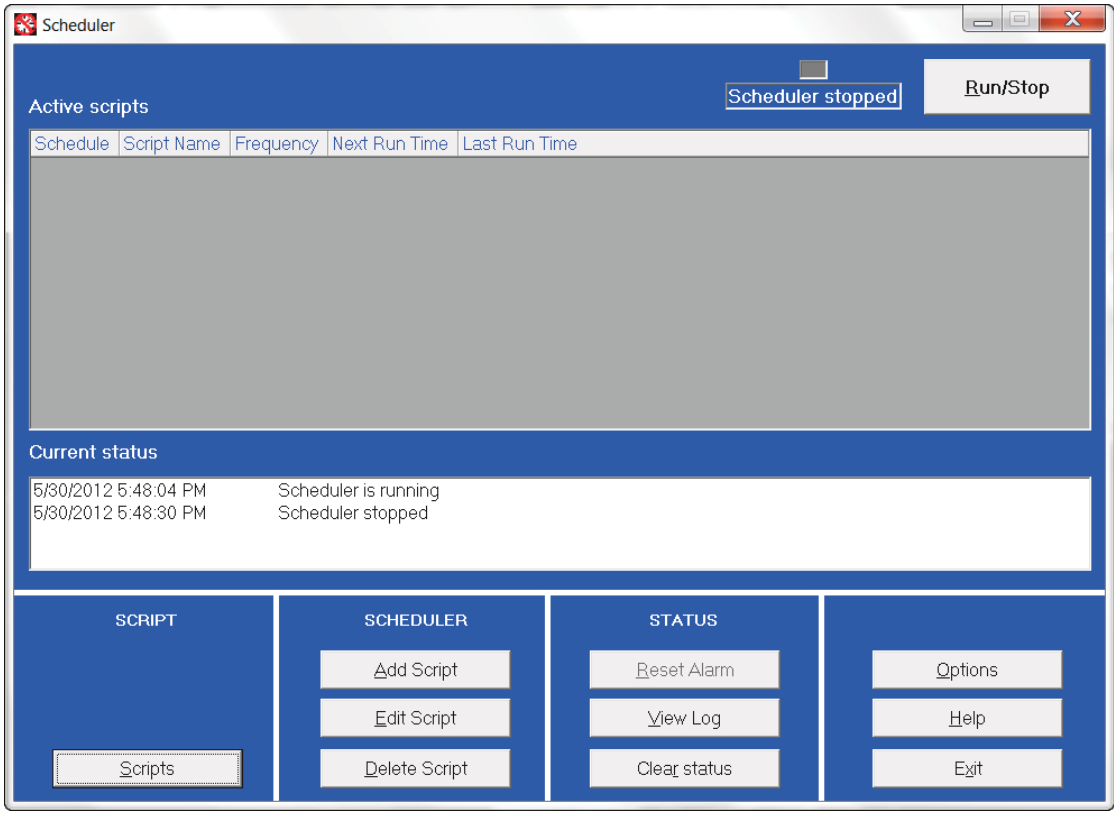

Meter
Internal Logged Data in Meter
Retrieve the Logs From the Meter with Script & Scheduler ™ Application at 8 am and 8 pm Daily
Stored Log Data on PC
Import the log data for use by the E-Billing EXT™ software with Automatic Import at Midnight daily
E-Billing EXT ™ Database Server

Figure 4.2: Timing of Log Downloads and Data Import (Example)

4.1: Setting Up the Log Download Scripts

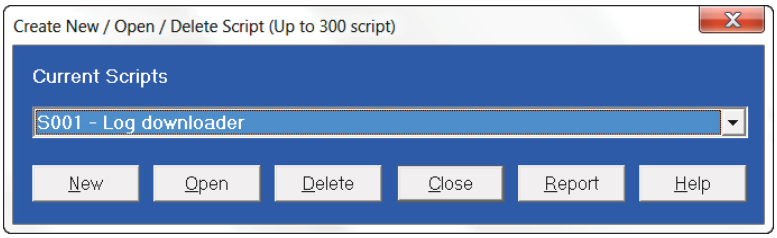
Follow these instructions to set up automatic log downloads with the Script & Scheduler™ application.

1. Click Start>All Programs>Electro Industries>Script & Scheduler™ to start the application. You will see the screen shown below.



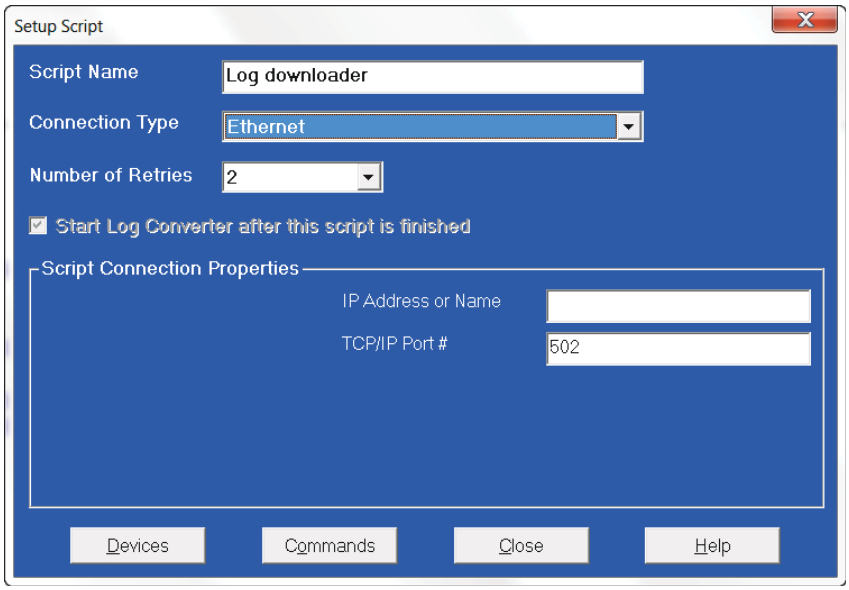
If the application is running (the box at the top has a red light blinking in it and the message “Scheduler is running” appears under the box), click Run/Stop. The application will stop (the box will be empty and Scheduler stopped will appear under the box).

2. Click Scripts. You will see the screen shown below.



Any scripts already created are in the pull-down menu.

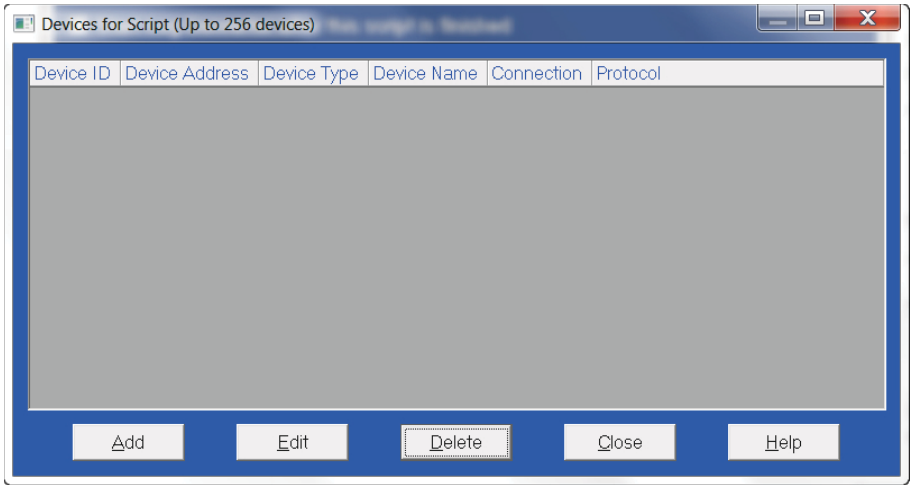
3. Click New. You will see the screen shown below.



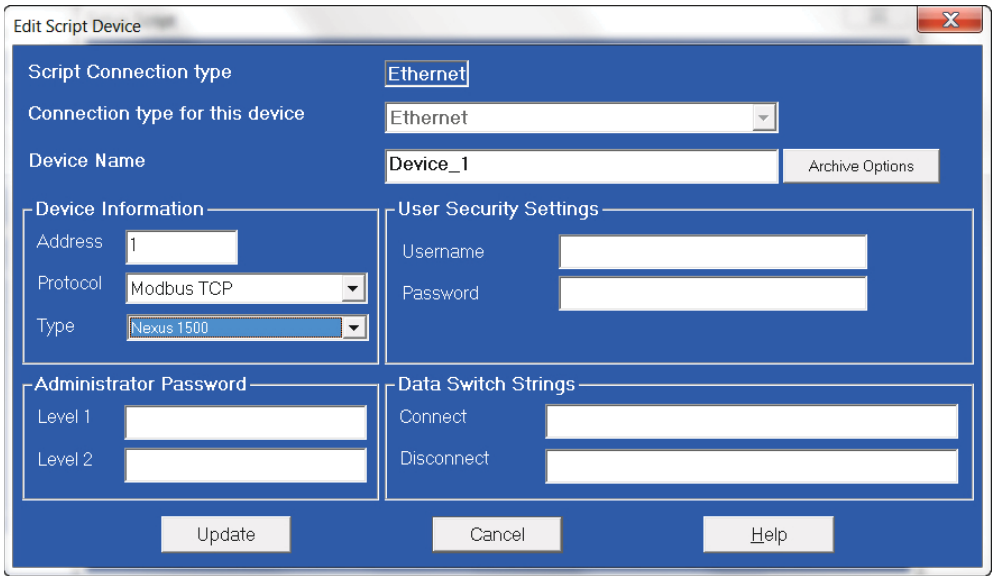
4. You will create a script for each meter whose data you are downloading (unless some of your meters are slaves to a Master meter, in which case they can be entered in the same script as the Master - instructions for this are given in step 8). Enter the following data:

- Script Name - give this script a unique name. It is best to call it the name or location of the meter.
- Connection Type - select Ethernet from the pull-down menu.
- Number of Retries - this field specifies whether you want the application to try connecting for the programmed number of times (between 0 and 5) if the first attempt was unsuccessful. Since this setting applies to Modem communication primarily, you should leave the default setting of 0.
- "Start Log Converter after this script is finished" is the default and cannot be changed. Log Converter is a related application that takes the data downloaded from the meter's log files and converts the data into the correct type of database for later retrieval. This is done automatically within the software - you do not need to do anything.
- Script Connection properties: enter the meter's IP address and the TCP/IP Ethernet port your PC uses to connect to it (the default port is 502).

5. Click Devices. You will see the screen shown below.



6. Click Add. You will see the screen shown below.



7. This is where you add the information for the meter whose log you want to download.

   - Device Name: enter the name of the meter.
     - Archive Options - click to view and/or change options for archiving the log database files.

   - Device Information: enter for your meter - device address, e.g., “1”; select Modbus TCP for communication protocol, and select your meter’s type, e.g., Shark® 200.

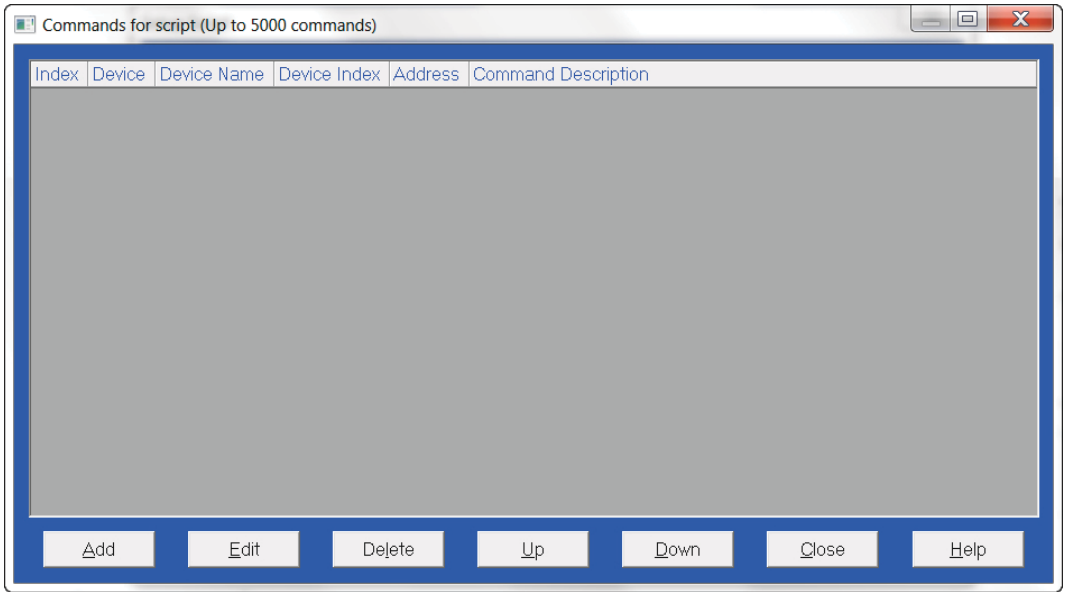
- Security settings and password: if security settings and/or password protection is used for the meter, enter those values in the appropriate fields.

- Data switch strings - leave these fields blank.

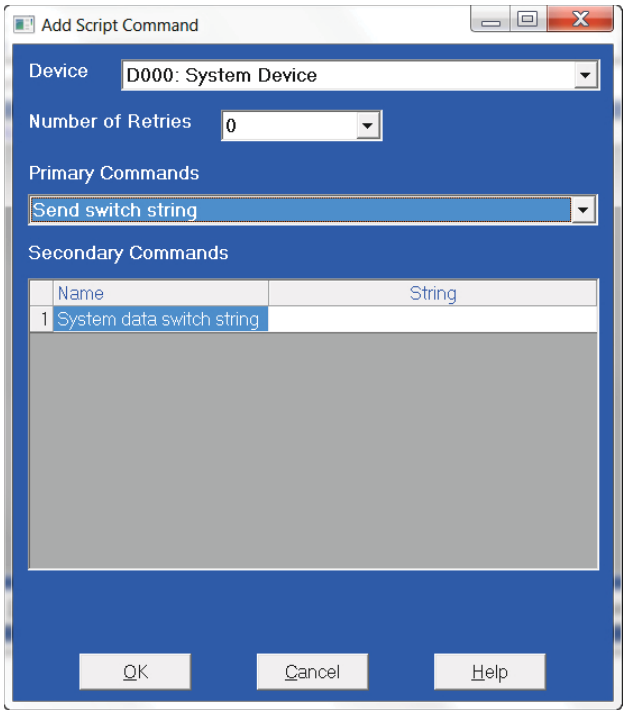
8. Click Update. You will return to the Devices for Script screen.
   NOTE: You can repeat steps 6 and 7 to add more meters to the script if you are entering slave meters, i.e., meters connected to a Master device. Slave meters share the Master meter's connection IP address, but they must have unique device addresses. You can add up 256 meters in total.

9. When you finish entering devices, click Close. You return to the Setup Script screen.

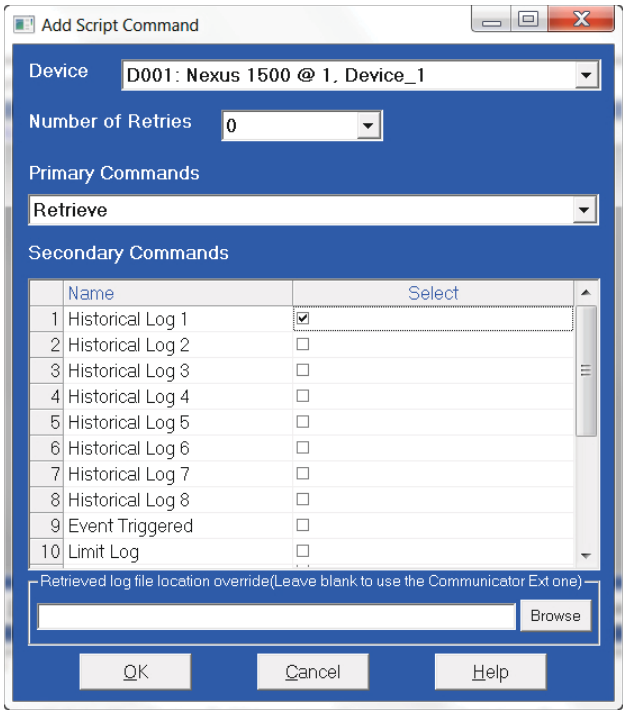
10. Click Commands. You will see the screen shown below.



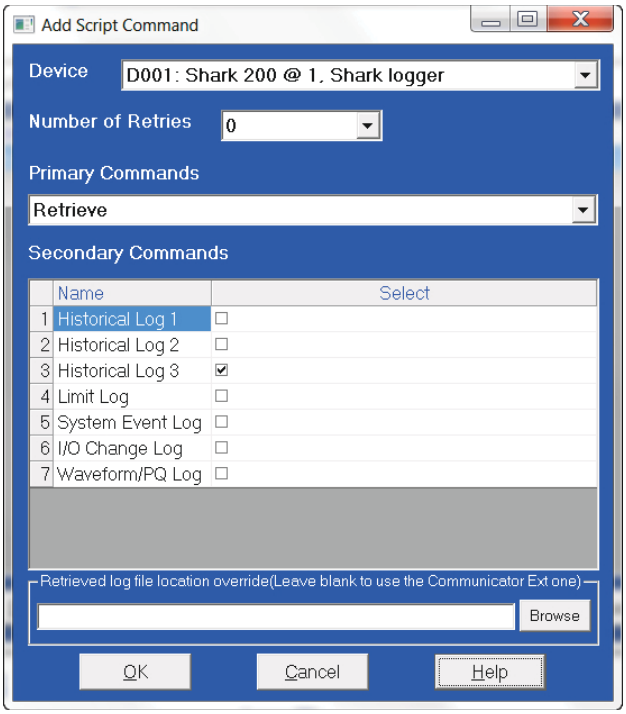
11. Click Add. You will see the screen shown below.



12. Select your meter from the Device pull-down menu. The screen changes as shown in the examples below.



Nexus® 1500 Add Script Command



Shark 200® Add Script Command

IMPORTANT! You must download the same log configured for Energy or other commodity logging. If you don't, there won't be any energy data (or other commodity data) to import. It is very important that you make sure to select the correct log.

13. Note that the Primary Command is "Retrieve" and the Secondary Commands are a a selection of logs.

    a. Click the logs that you set up with the billing data (see Section 1.5.1).

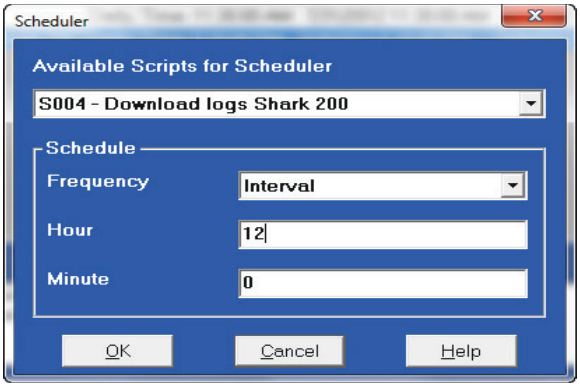
    b. The blank field at the bottom of the screen tells the Script & Scheduler™ application where to find the logs it needs to download. If you want to use the Communicator EXT™ application's default location, keep this field blank. If you want to set a new location for the retrieved logs, click Browse to locate it.
    By default, for the Windows XP® OS, the retrieved logs are stored in: C:\Documents and Settings\[user]\My Documents\Electro Industries\Communicator EXT\Retrieved Logs. For the Windows 7® OS, the retrieved logs are stored in: C:\Users\Public\Documents\Electro Industries\Communicator_EXT\Retrieved Logs. For the Nexus® 1500 meter only, the path includes after Retrieved Logs \[meter's name_meter's serial number]\logs\[log_type]\logtype.db.

14. Click OK. You will return to the Commands for Script screen. The command you entered and the device it is for are displayed on the screen. If you entered slave meters, repeat the process for all of the meters in the Device pull-down menu.

15. Click Close. You will return to the Setup Script screen.

16. Click Close. You will return to the Create New/Open/Delete Script screen. Your script will be in the pull-down menu.

17. Click Close. You will return to the Script & Scheduler™ main screen. Under the Scheduler column at the bottom of the screen, click Add Script. You will see the screen shown below.



18. Select your new script from the pull-down menu, select "Interval" for Frequency and specify 12 hours and 0 minutes. This will cause a download of the meter's logs every 12 hours.
    NOTE: This is not the only setting you can make, but it is the recommended setting when you are scheduling automatic import of meter data through the E-Billing EXT™ application. You can perform the downloads more often, but we do not recommend that you perform them less often.

19. Click OK. You will return to the Script & Scheduler™ main screen. Add additional scripts as needed, for downloading logs from additional meters.
    NOTE: You can enter 300 scripts. If you have more than 300 meters, you will need to set up an additional server and run the Script & Scheduler™ application on it to add the additional meters.

20. When you are done, re-start the Script & Scheduler™ application by clicking the Run/Stop button. Your log data will now be retrieved according to the interval you set and the Log Converter will prepare the data and send it to the log database.

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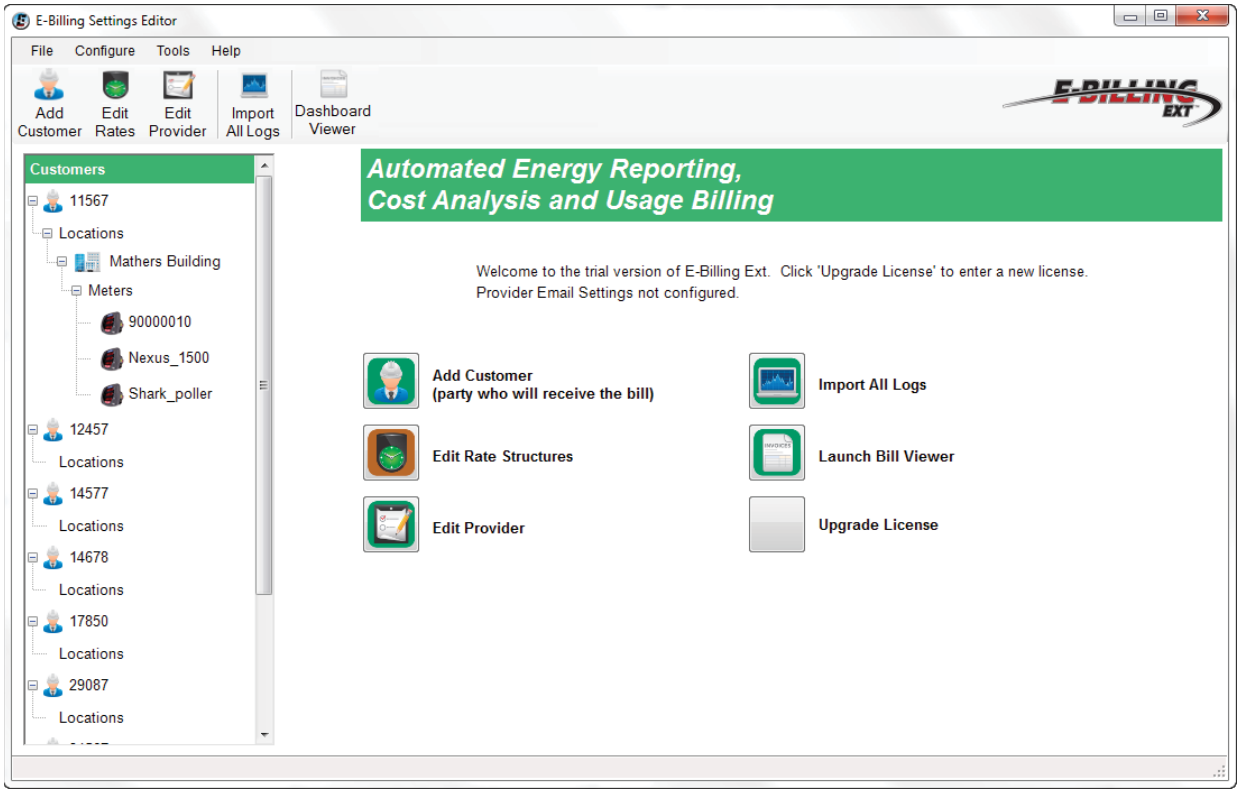
5: Step 5 - Configure the E-Billing EXT™ Application Settings

The E-Billing Settings Editor lets you set up the information you need to generate bills. When you start the E-Billing Settings Editor you will see the main screen, shown below.



Follow these basic steps to set up the application:

1. Set up provider information. The provider is the person or organization which is providing the energy, sending the bill, and receiving payments. This information appears on the generated bills, so that the customer knows where to send payment.

2. Set up rate structures. The rate structure is the collection of settings that determine what rates to apply to the usage values for a commodity, e.g., kWh. The rate structure includes On Peak and Off Peak settings, holidays, and other charges, such as taxes.

3. Set up a customer. A customer is the person or organization which is receiving the bill. A customer may have multiple locations, each of which will get its own bill.

4. Set up the customer's locations. A billing location is a single unit for which a bill is generated, e.g., a building. A customer can have multiple locations.

5. Assign the meters and a rate structure to the customer's locations. Each location can have multiple meters and a rate structure for each commodity being billed for, e.g., Energy and gas.

   For example, if your customer owns three apartment buildings, you would set up each building as a location, and enter all of the meters in a building as well as any rate structures applied to usage for that building.

   See the diagram below.

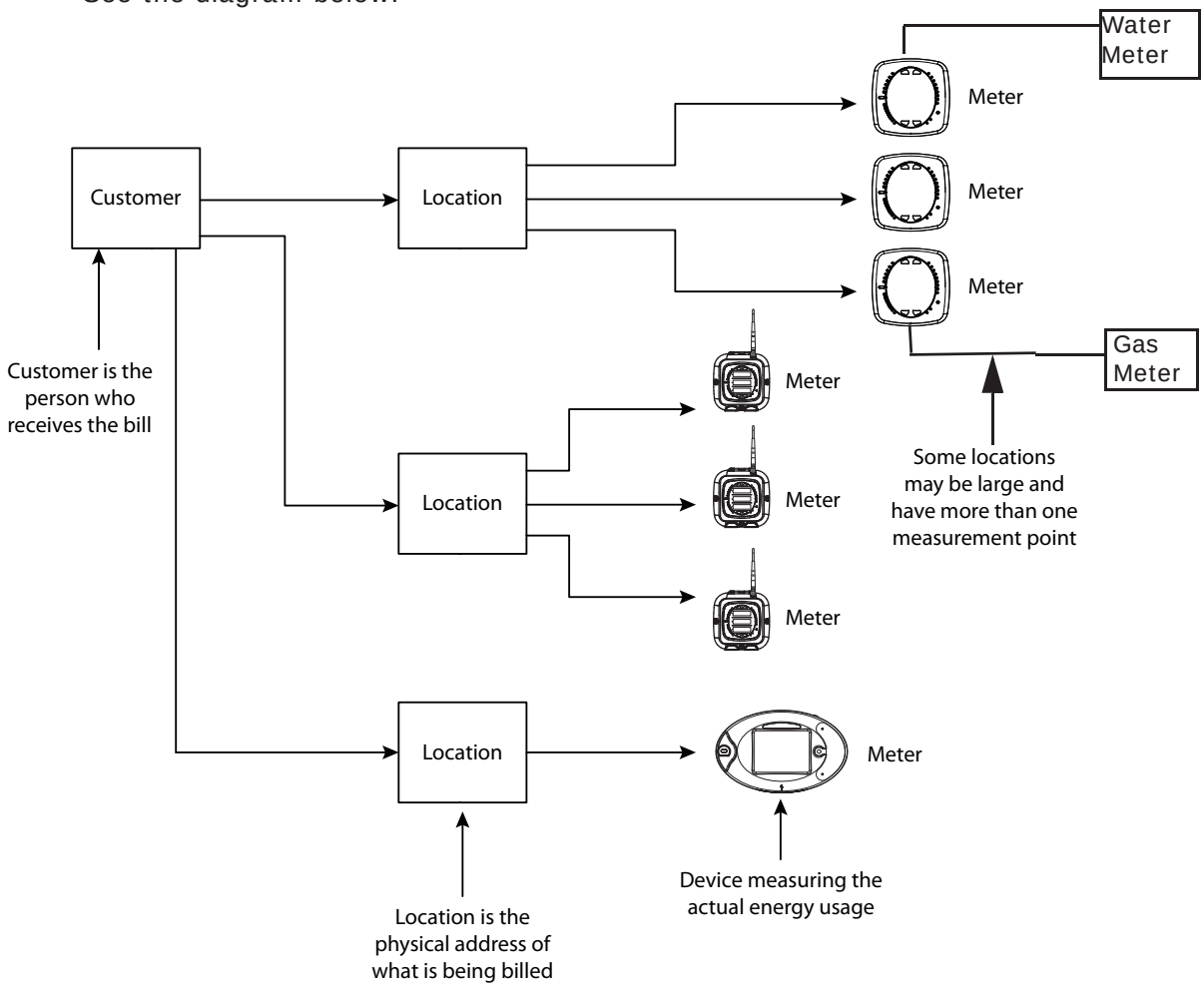
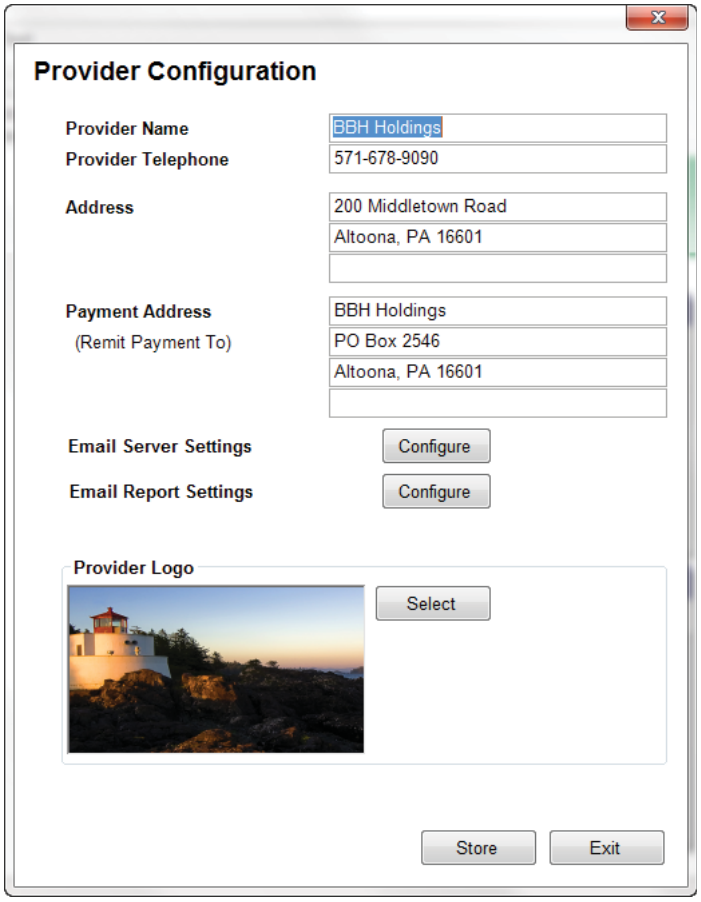


Figure 5.1: Overview of Customer Locations, Meters, Rate Structures

5.1: Set Up a Provider

First set up the provider information. The provider is the person who is sending the bill to the customer. The provider will get paid for providing the electricity or other commodity to the customer; the customer is the user of the commodity.

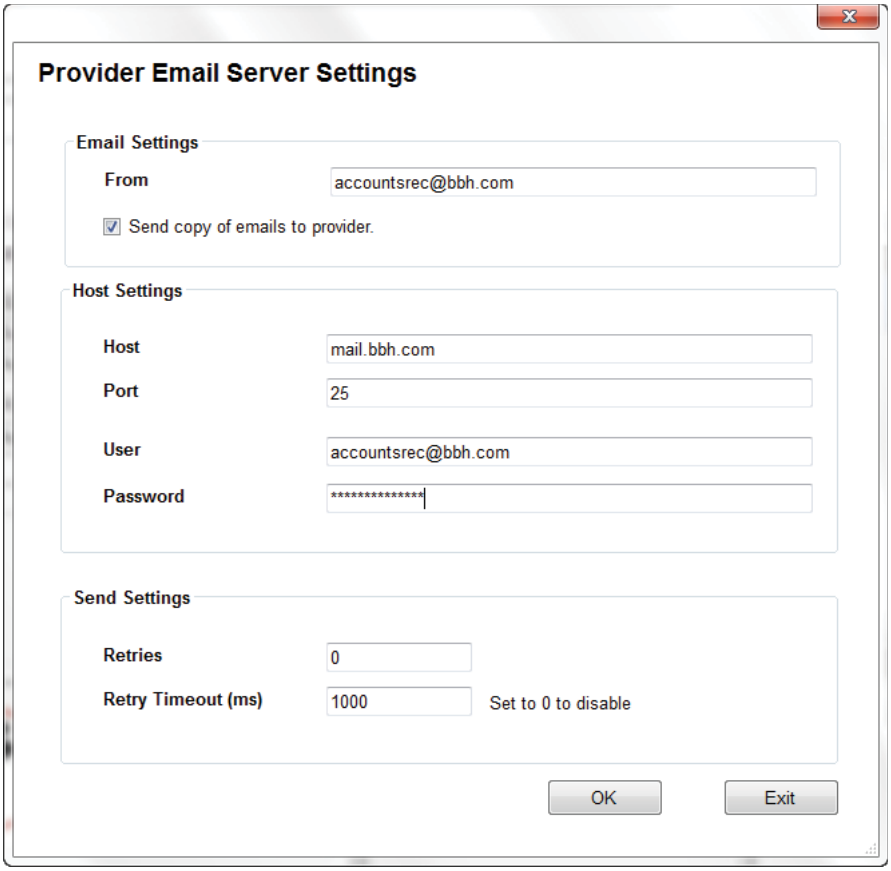
1. From the E-Billing Settings Editor main screen, click the Configure Provider Information icon. You will see the screen shown below.



2. For the provider, enter:

   - Name
   - Telephone
   - Address
   - The address where payment should be sent
   - Email settings:

• Click Configure next to the Email Server Settings.

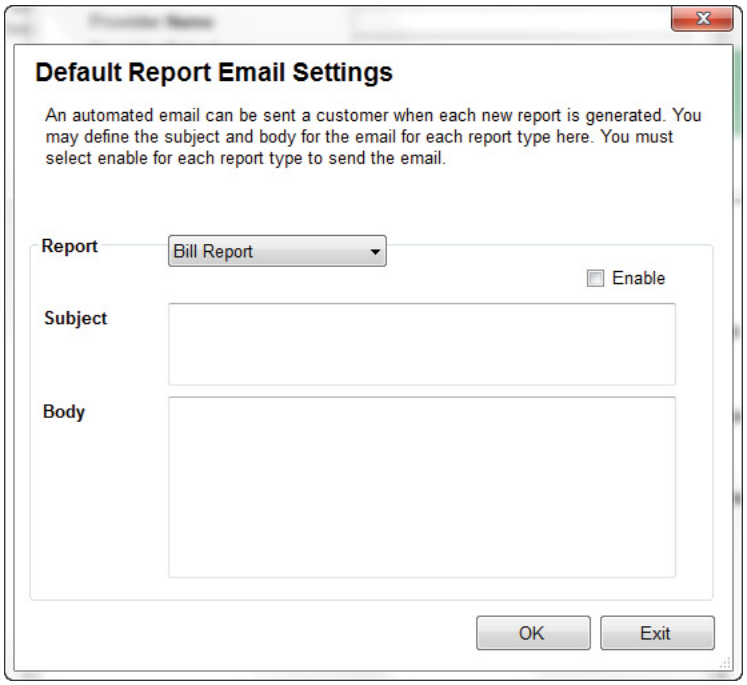


The settings on this screen are used for automatically sending bills and energy summary reports to different users. The software will automatically send out these emails reports.

Enter the following:

- From Email: enter the name that will appear in the emails' From field. **NOTE:** When the checkbox next to "Send copy of emails to provider" is selected (checked), a copy of any bill or report email sent to a customer is sent to the From email address.
- Host Settings: enter the email's Host Name, Port, and User name and Password if being used.
- Send Settings: enter the number of email retries in sending and the Retry Timeout in milliseconds (the default is 1000ms). If you want to disable the Retry Timeout, enter 0 in this field.
- Click OK.

• Click Configure next to the Email Report Settings fields.


Default Report Email Settings
An automated email can be sent a customer when each new report is generated. You may define the subject and body for the email for each report type here. You must select enable for each report type to send the email.
Report
Bill Report
Enable
Subject
Body
OK
Exit

Enter the following:

- Report: select either Bill Report or Usage Report from the pull-down menu.
- Click Enable.
- Enter a Subject for the email.
- Enter the email text in the Body field.
- Click OK.

NOTE: What you enter here are the default settings for the email's subject line and body text, but you can change the subject line and/or body text for a particular customer configuration - see Section 5.3.

The automatic Bill Report and Usage Report email feature lets you generate hundreds of automated bills or energy reports. You can configure the system to send out bills to users automatically on a monthly basis. Using this feature provides you with an automated accounting service and eliminates any need for third party billing providers. You receive feedback of successful transmission for accounting purposes and can set up a cc address so that you receive a copy of the bill or usage report.

- Click Select to choose a company logo for the bill.

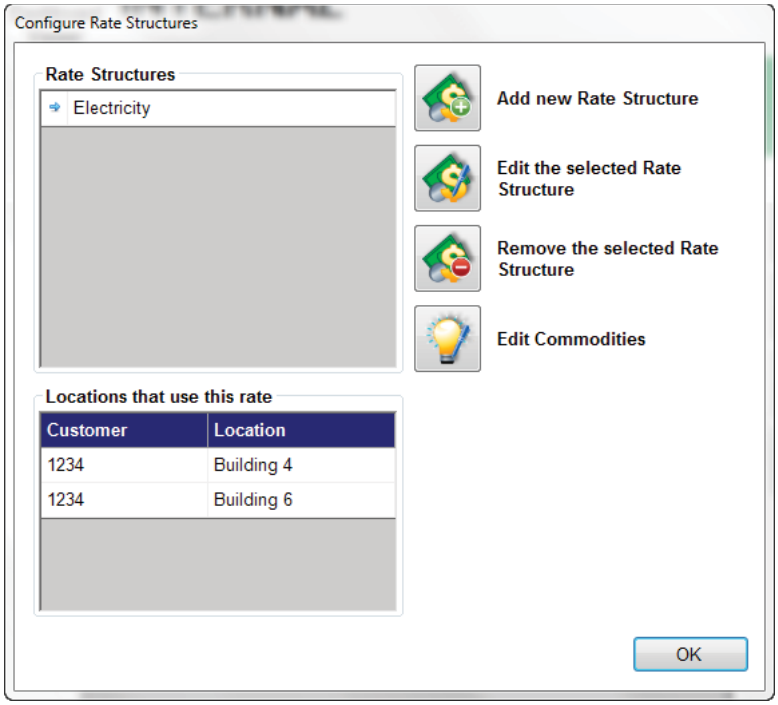
  NOTE: The image must be 256x128 pixels in size. If it is not, it is scaled by the application, which may result in the image not looking the way you want.

3. Click Store to save your entries and then click Exit to close the screen.

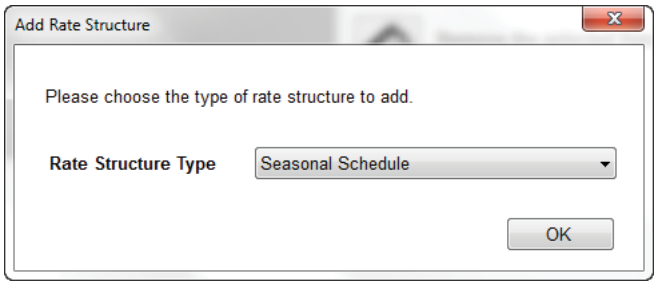
5.2: Set Up Rate Structures

The next step is creating rate structures that will be applied to billed usage at locations. You can set up one rate structure for each commodity at a location. Multiple locations can use the same rate structure.

1. From the E-Billing Settings Editor main screen, click the Edit Rate Structures icon. You will see the screen shown below.

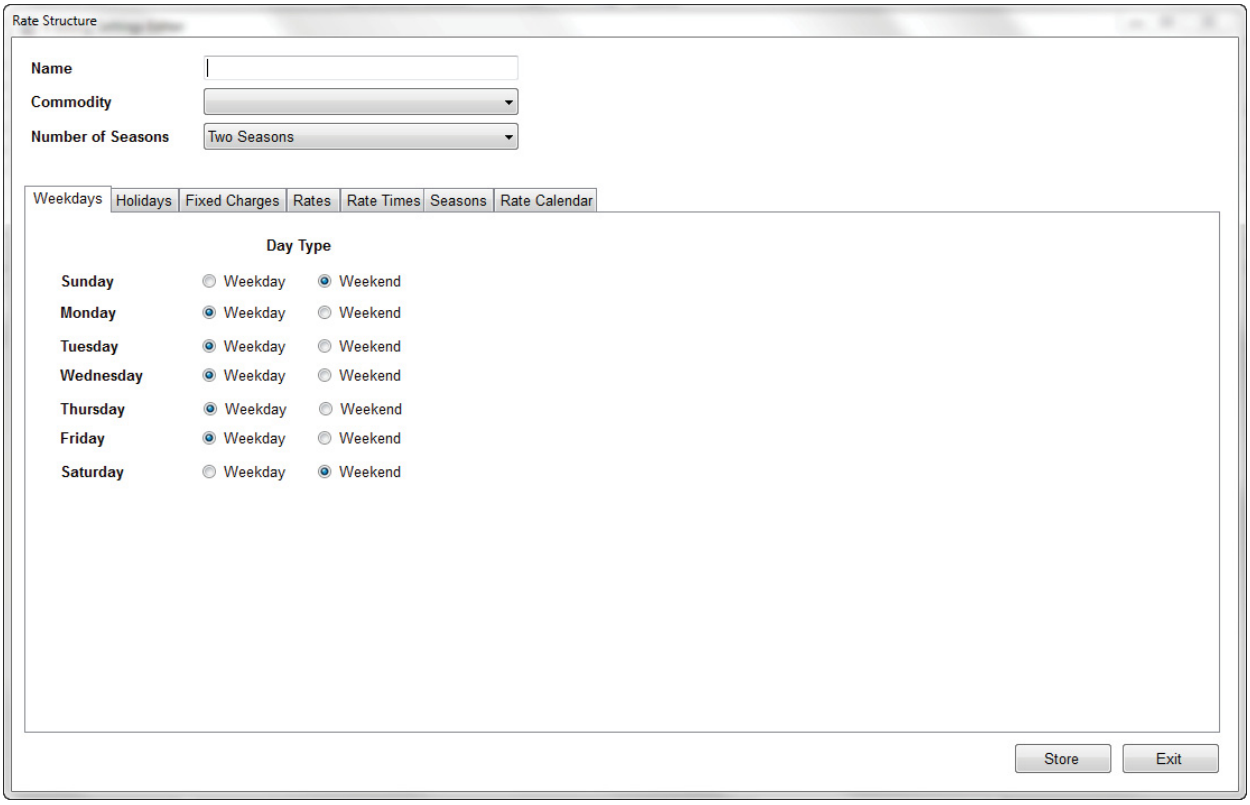


2. If you have already set up rate structures, you will see those in the box on the left. To add a new rate structure, click the Add New Rate Structure icon. You will see the screen shown below.



3. Select Seasonal Schedule or Flat Rate from the pull-down menu and click OK.

- Select Seasonal Schedule to set up a rate structure with different rates for different times of the day, week, and/or year. Then continue with step 4.
- Select Flat Rate to set up a rate structure with a single rate only (no On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates). Then go to step 6.

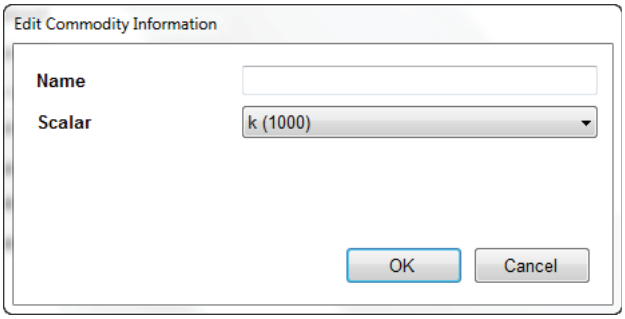


4. After selecting Seasonal Schedule, you'll see the screen above. Use this screen to set up all of the information for this rate. Do the following:

   - Enter a name for the rate structure; this name will appear on the bill.

   - Select Commodity from the pull-down menu. A commodity is a usage value the software uses when computing the rates for a bill from the imported Energy or other commodity data. You can select an existing commodity, or Create New. For Energy usage, select kWh. When the bill is generated, the software uses the rate structure for the commodity, e.g., kWh, to determine the charge for the amount of usage the customer has for the billing period,e.g., total kWh.

     If you select Create New, you will see the screen shown below, which lets you set up a new commodity to use.



   a. Enter a name for the new commodity.

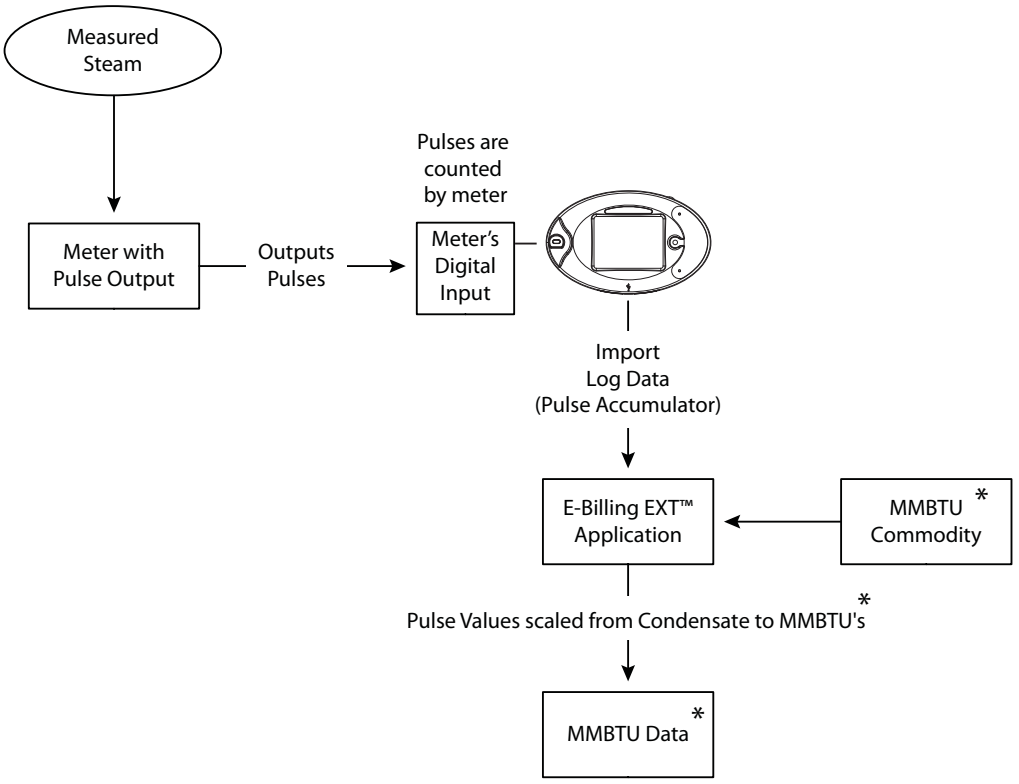
   b. Select the scalar from the pull-down menu - you can select Unit (1), k(1000), M(1000000) or Custom (Infinity). If you select custom, another field opens up on the screen for you to enter the Custom Scalar value.

      The scalar you select is applied to the commodity's usage values for all of the meters. This is important because the meters themselves may have been set up with different scaling values. The scalar insures that the usage values will all be scaled the same way in the E-Billing EXT™ application.

      When you are tracking usage other than Energy, a custom scalar can be used to change the unit measured. For example, if you are tracking Condensate (steam), the meter's pulse accumulator channel, i.e., Digital Input, records the number of pulses coming from the Condensate meter which is

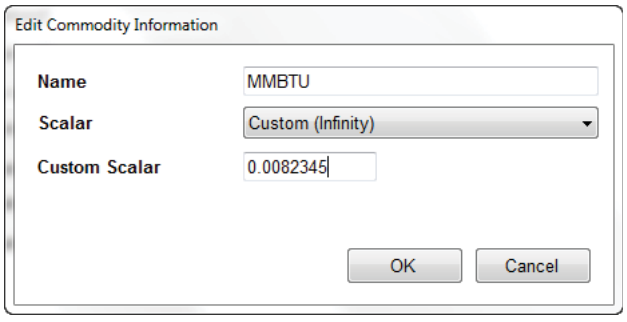
measuring the steam directly. But you may need to convert the pulse accumulation value to MMBTUs for your billing. In this case, you would use the scalar to convert the number of pulses to the MMBTU usage value. See the figure and example screen on the next page.

Pulse Accumulation Measurement Example
-This example converts measured condensate to MMBTU's



* To convert condensate to MMBTU, configure the scalar for the commodity.
This value should be the value to convert 1 pulse to MMBTU.
For example, if 1 pulse = 1 kgallon of steam, and 1 gallon of steam equals 8.2345 MMBTU, then the scalar should be 0.0082345.

Figure 5.2: Scalar Example for Commodities Other Than Energy



c. Click OK to save your entries and close the screen (click Cancel if you want to close the screen without saving your entries).

- The other settings for rate structure are as follows:

Seasons Setting

The Seasons setting lets you set up different rates for up to four different times of the year, referred to as Seasons. Select the number of seasons from the pull-down menu. If you select more than one season, you will see a Seasons tab that you will use to set the seasons' dates. You use the Rates tab to set different On-Peak and Off-Peak rates for each season, and you use the Rate Times tab to assign On-Peak and Off-Peak to different days and times of the day, for each season.

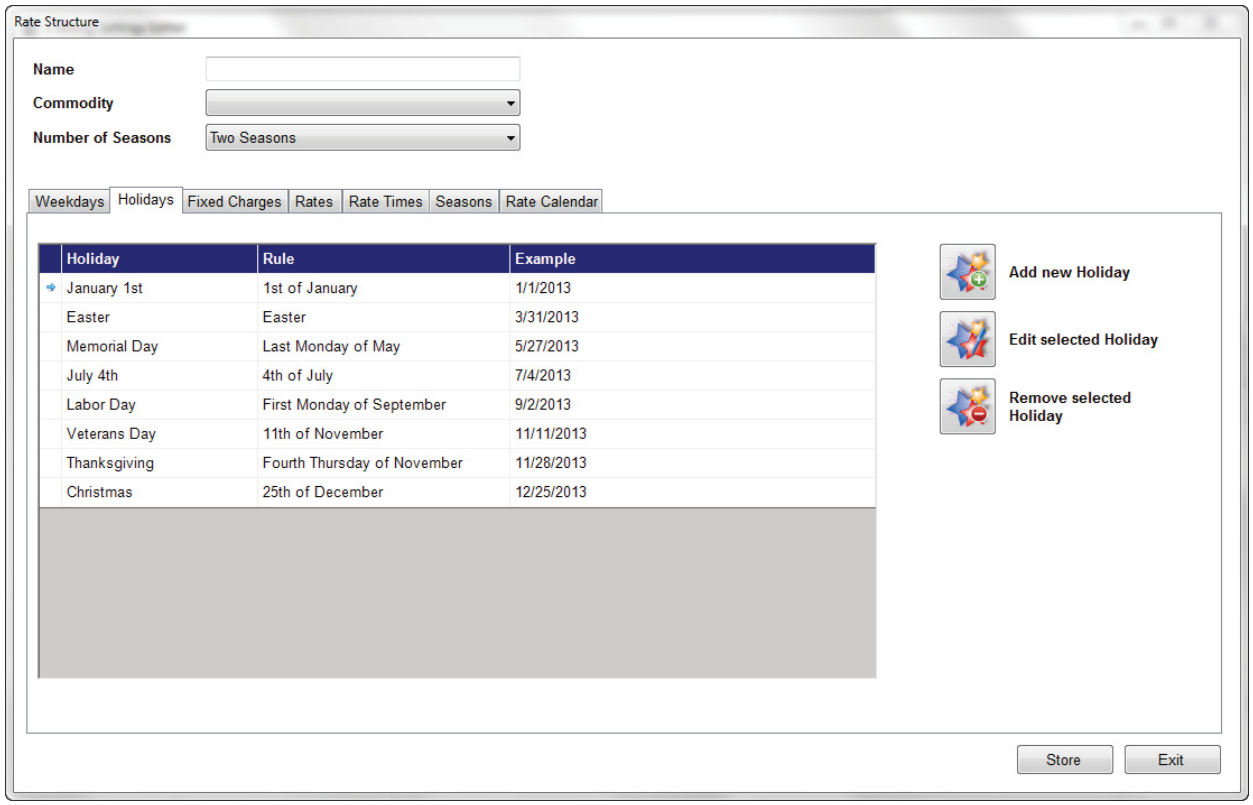
Weekdays / Weekends

Click the Weekdays tab to designate days as weekday or weekend (this is the tab view you see when the screen first opens). You use the Rates tab to set different rates for weekends and weekdays.

Holidays

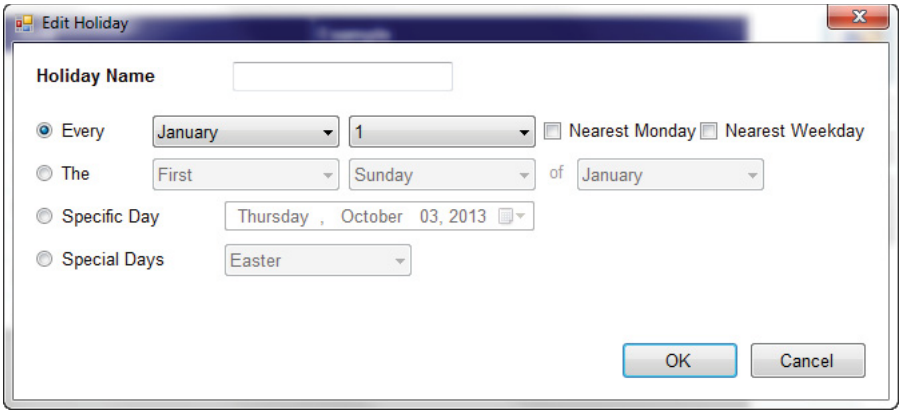
The E-Billing EXT™ application configures holidays based on a perpetual calendar. A perpetual calendar allows you to set up the holidays once and from then on have the software determine all the future holidays based on the rules you set up.

Click the Holidays tab. You will see the screen shown below.



Use this screen to designate days that will use the Holiday rate. Once you set up the holidays you use the Rates tab to enter the Holiday rate.

a. Click the Add New Holiday icon to open the screen shown below.



b. Enter a name for the holiday.

c. You have these options for setting up the holiday:

- Click the radio button next to Every and select the month and day from the pull-down menus, e.g., January 1. The nearest Monday and Nearest Weekday checkboxes are used for holidays that are changed to another day of observance if they fall on a Saturday or Sunday. If the holiday will be celebrated on the following Monday if it falls on a weekend, click the Nearest Monday checkbox. If the holiday will be celebrated on the nearest weekday if it falls on the weekend (i.e., Friday if the holiday falls on Saturday, or Monday if it falls on Sunday), click the Nearest Weekday checkbox.

- Click the second radio button and select First, Second, Third, Fourth, Fifth, or Last from the first pull-down menu; select the day of the week from the second pull-down menu; and select the month from the third pull-down menu, e.g., The Third Thursday in November for U.S. Thanksgiving Day.

- Click the radio button next to Specific Day and click the pull-down menu to open a calendar that lets you choose the day of the holiday that only occurs once.

- Click the radio button next to Special Days to select a holiday that doesn't follow any of the above rules, such as Easter.

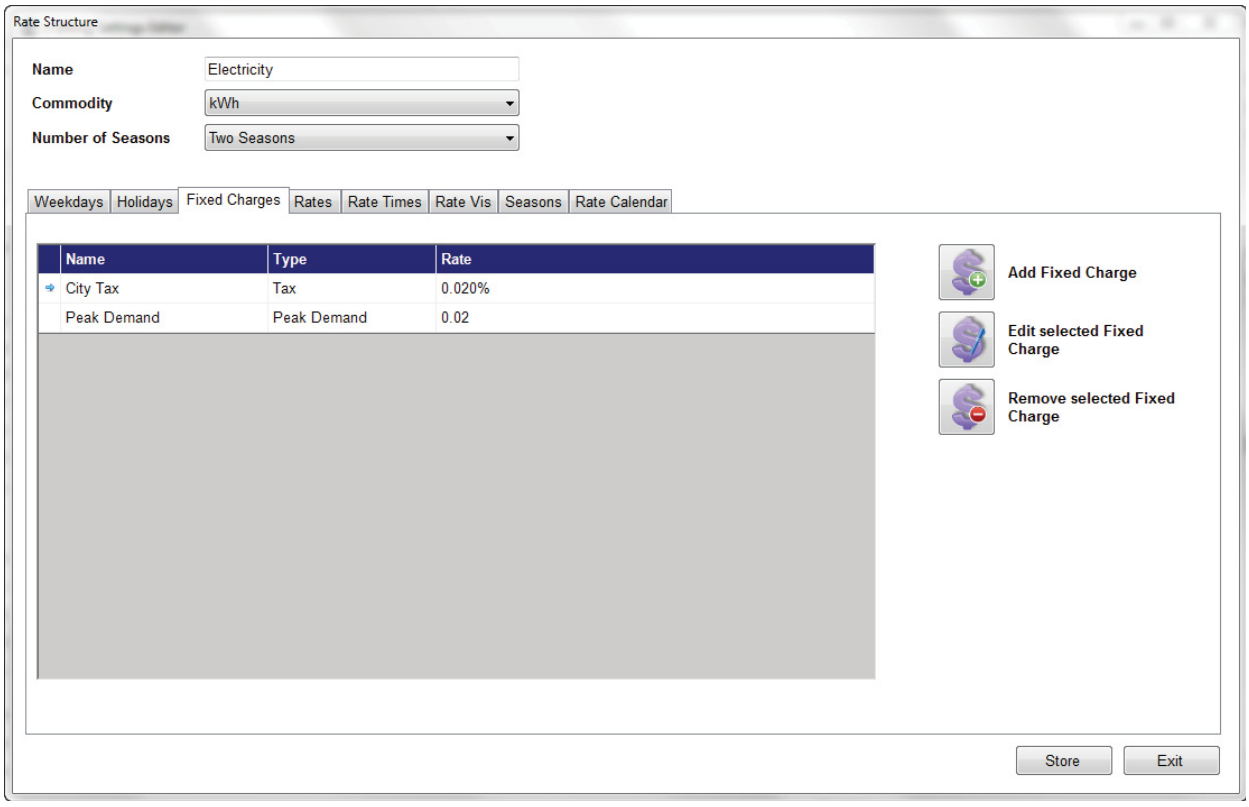
d. Click OK to save the holiday and return to the Holidays tab screen.

NOTES:

- To edit a holiday, click on the holiday in the list and click the Edit Selected Holiday icon. You will see the same screen as when you are adding a holiday, but it will show the holiday's settings. Change what you want and click OK to save the changes.
- To delete a holiday, click on the holiday in the list and click the Remove Selected Holiday icon. You will see a Confirmation window asking if you are sure you want to remove the holiday - click Yes to remove; click No to keep the holiday.

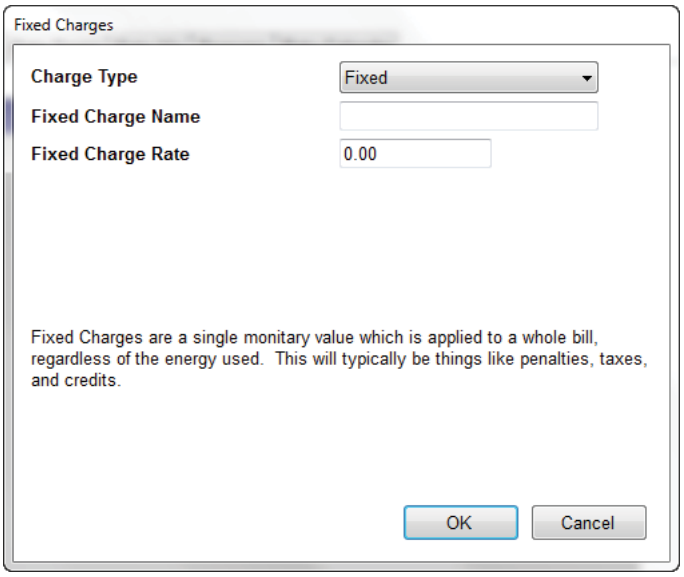
Fixed Charges

Click the Fixed Charges tab to configure single charges you want to be applied to the commodity when the bill is generated. You will see the screen below.



You can add a fixed charge, edit an existing fixed charge, or remove an existing fixed charge.

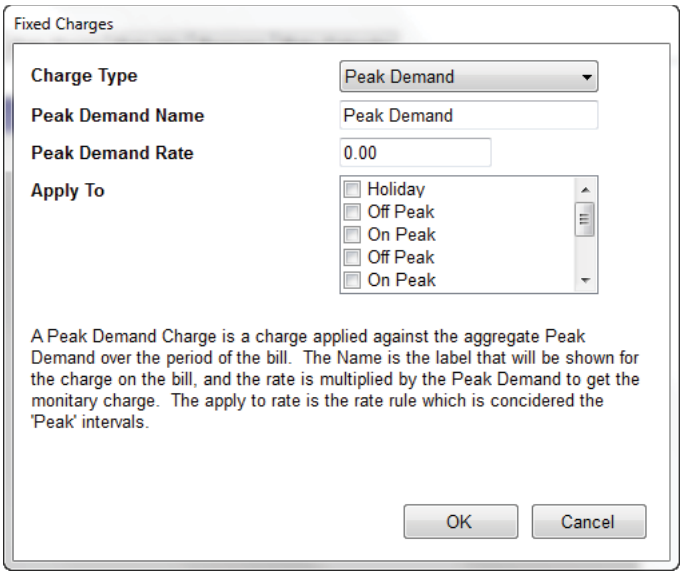
a. Click the Add Fixed Charge icon. You will see the screen shown below.


Fixed Charges
Charge Type
Fixed
Fixed Charge Name
Fixed Charge Rate
0.00
Fixed Charges are a single monitary value which is applied to a whole bill, regardless of the energy used. This will typically be things like penalties, taxes, and credits.
OK
Cancel

b. Select the Charge Type from the pull-down menu. You can select Fixed, **Peak Demand**, Flat Rate, Tax, or Coincidental Peak Demand:

- Fixed: select this to add a single charge that is added to the bill when it is generated, regardless of the usage amount, e.g., processing fee.
- **Peak Demand**: select this to enter a **Peak Demand surcharge**, which is an additional charge applied to Peak (highest amount) usage during the billing period (see step c).
- Flat Rate: select this to add a charge that applies to the total usage, e.g., a Generation charge or Fuel surcharge. This rate is multiplied by the total usage when the bill is generated.
- Tax: select this to enter a tax percentage that will be applied to the total when the bill is generated, i.e., multiplied by the total dollar amount on the bill for the commodity, and added to the bill.
- Coincidental Peak Demand: select this to compute the Peak Demand time from a meter at another location, e.g., a Utility meter. The time of the charge comes from the Utility meter, but the charge is applied to the sum of the location's meter(s)' usage. See the example on pages 5-17 - 5-18.

c. For every charge type *except* Peak Demand and Coincidental Peak Demand, you then enter the Charge Name and Rate (or Percentage for Tax). If you select **Peak Demand**, the screen changes as shown below.


Fixed Charges
Charge Type
Peak Demand
Peak Demand Name
Peak Demand
Peak Demand Rate
0.00
Apply To
Holiday
Off Peak
On Peak
Off Peak
On Peak
A Peak Demand Charge is a charge applied against the aggregate Peak Demand over the period of the bill. The Name is the label that will be shown for the charge on the bill, and the rate is multiplied by the Peak Demand to get the monitary charge. The apply to rate is the rate rule which is concidered the 'Peak' intervals.
OK
Cancel

The charge's name defaults to **Peak Demand**, though you can change it if you want. The name appears on the bill next to the **Peak Demand charge**.

d. Enter the **Peak Demand rate**, and click the checkbox(es) (rate periods) you want the Peak Demand rate applied to. You can apply it to Holiday, Peak and/or Off Peak usage. The Peak Demand rate you enter will be applied to peak demand in the selected rate periods when the bill is generated, i.e. the Peak Demand usage is multiplied by the Peak Demand rate to get the Peak Demand charge.

e. **Coincidental Peak Demand** is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed based on the configured Utility meter, rather then the meters at the location.

For example: 2 locations, with 4 meters, total.
Location 1 has 1 meter, which is the Utility meter that the Peak Demand is based on. The demand values for this meter are shown in the table below.

This is the time of the Utility meter's Peak Demand →

Time	kWh Reading
12:00	15kWh
12:15	17kWh
12:30	16kWh
12:45	14kWh

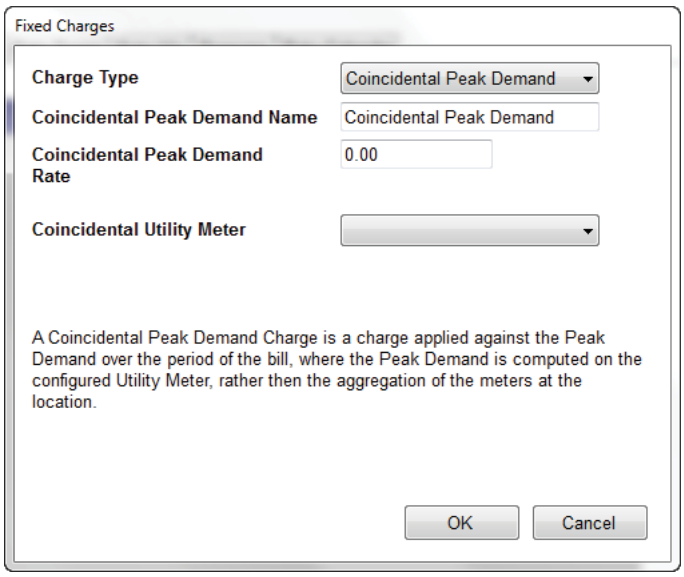
Location 2 has 3 meters. The meters' demand values are shown in the table below.

Time	kWh Reading		
	Meter 1	Meter 2	Meter 3
12:00	7kWh	8kWh	3kWh
12:15	4kWh	3kWh	1kWh
12:30	5kWh	1kWh	8kWh
12:45	15kWh	20kWh	9kWh

← The values in this row are added together and then will have the fixed rate charge applied to them

When the Coincidental Peak Demand fixed charge is set up using the Utility meter, and this rate structure is applied to Location 2, a bill generated for Location 2 will have a Coincidental Peak Demand value of (4+3+1) 8kWh x the fixed charge rate, since the Peak Demand at meter 1 (Location 1) is at 12:15.

NOTE: The Utility meter can be at any location.


Fixed Charges
Charge Type
Coincidental Peak Demand
Coincidental Peak Demand Name
Coincidental Peak Demand
Coincidental Peak Demand Rate
0.00
Coincidental Utility Meter
A Coincidental Peak Demand Charge is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed on the configured Utility Meter, rather then the aggregation of the meters at the location.
OK
Cancel

After selecting Coincidental Peak Demand, enter a Name and Rate for the Coincidental Peak Demand, and then choose the Utility meter from the pull-down menu.

f. Click OK to save your settings and return to the Fixed Charges tab screen. Your new charge is listed on the screen.

NOTES:

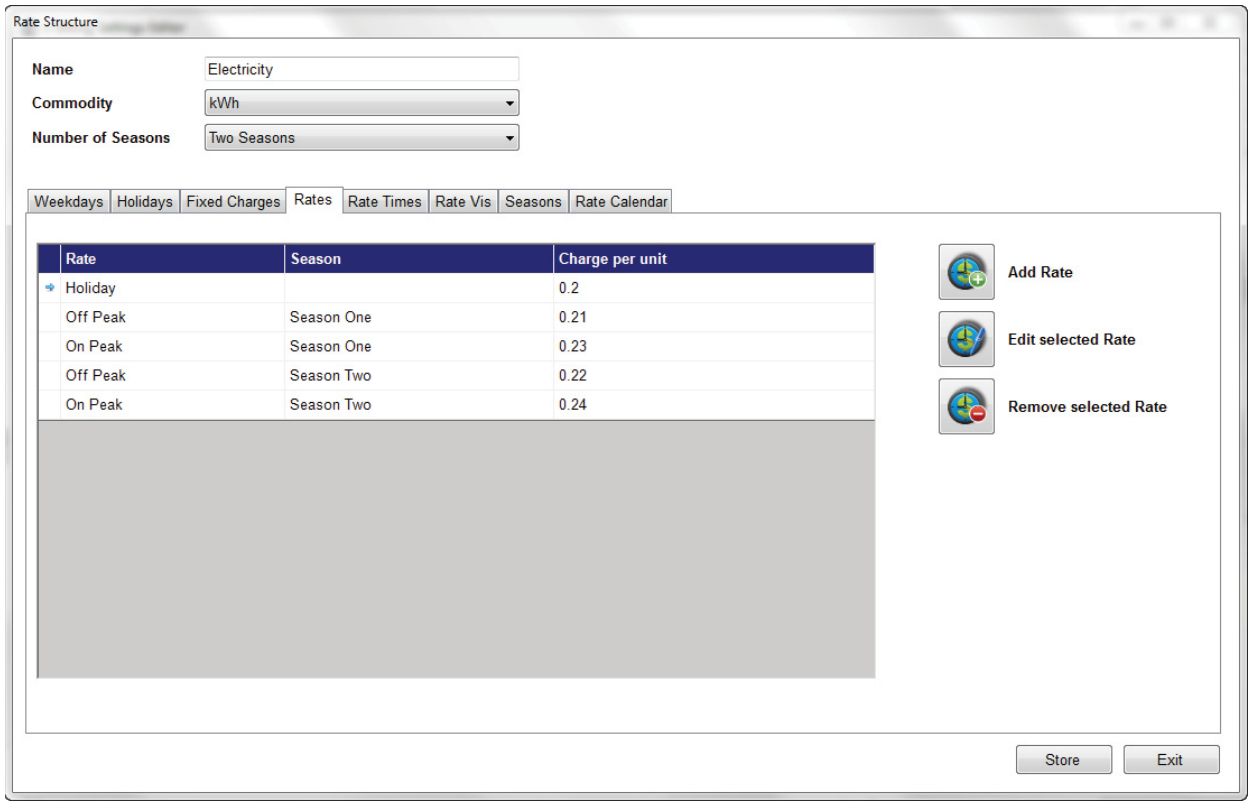
- To edit a charge, click on the charge in the list and click the Edit Selected Fixed Charge icon. You will see the same screen as when you are adding a fixed charge, but it will show the charge's settings. Change what you want and click OK to save the changes.

- To delete a charge, click on the charge in the list and click the Remove Selected Fixed Charge icon. You will see a Confirmation window asking if you are sure you want to remove the charge - click Yes to remove; click No to keep the charge.

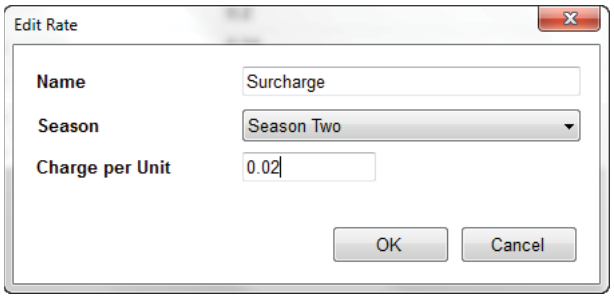
Rates

Rates are the amount of money charged per usage commodity. For instance, with electricity, the rate is usually an amount of cents per kWh. On Peak rates often cost more than Off Peak rates. If you are not using TOU, then set only one rate and amount. The charge per unit is in dollars and cents, so for 5 cents, enter 0.05.

Click the Rates tab to configure specific rates: by Default, On Peak, Off Peak, and Holiday rates. If you have set up two seasons, you can configure rates for each season. The rates will be applied to the usage when the bill is generated, e.g., if you set a rate for Season 1 Off Peak, that rate is applied to all usage that occurs during Off Peak times, during the period designated as Season 1.
You will see the screen shown below.



a. If you want to use more rates than Off Peak and On Peak, click the Add Rate icon. You will see the screen shown below.



b. Enter a name for the rate; select the Season the rate will be applied to (if you selected only one season, you will only be able to choose Season One); enter the charge per unit. For Energy usage, this is the charge per kWh.

c. Click OK to save the rate and return to the Rates tab screen. The rate you added is now listed in the screen. Make sure you assign Rate Times for this new rate (see below).

NOTES:

- To edit a rate, click on the rate in the list and click the Edit Selected Rate icon. You will see the same screen as when you are adding a rate, but it will show the rate's settings. Change what you want and click OK to save the changes.

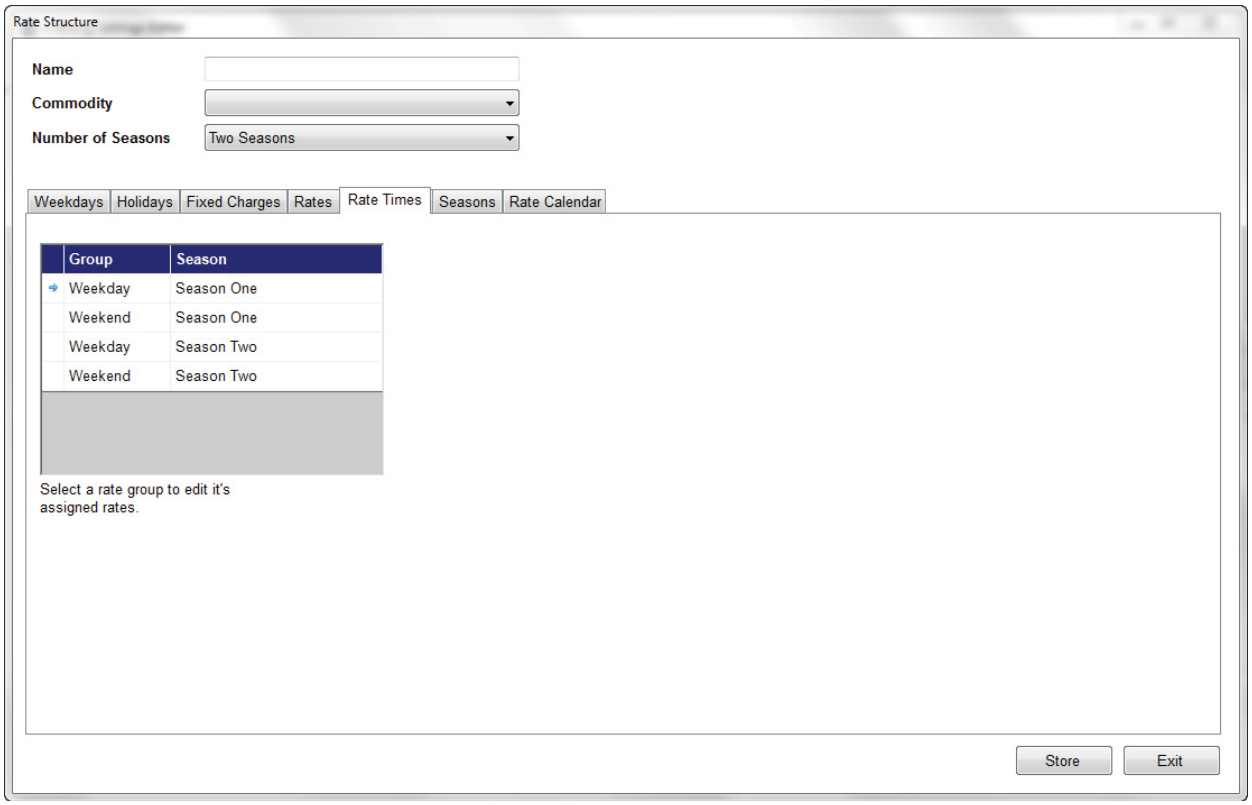
- To delete a rate, click on the rate in the list and click the Remove Selected Rate icon. You will see a Confirmation window asking if you are sure you want to remove the rate - click Yes to remove; click No to keep the rate. If you delete a rate, the rate times assigned to it (see the following section) are assigned to the next available rate.

Rate Times

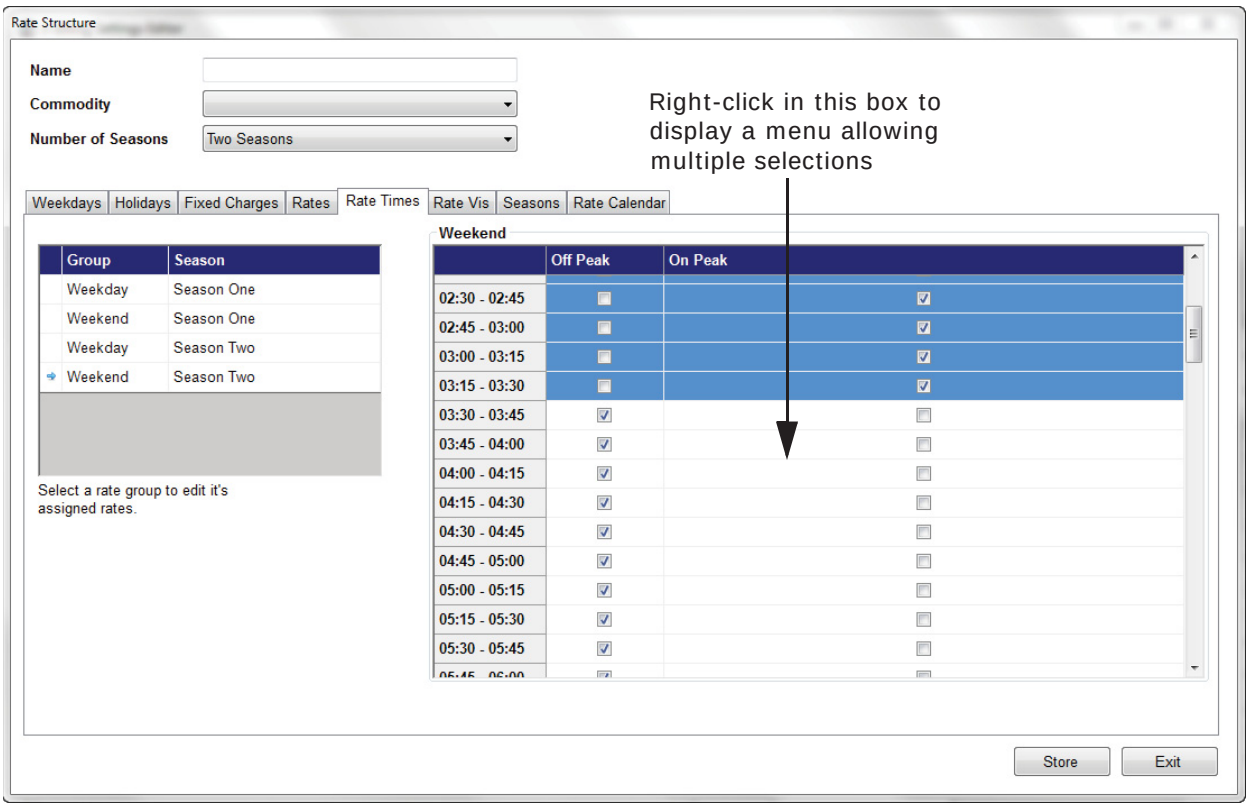
Click the Rate Times tab to assign periods to your rates. You can assign rates to 15 minute time intervals within a day. You set rates for both weekday and weekend time intervals, as well as for both Season 1 and Season 2 if you set up two seasons for this rate structure. These settings are used to generate the bill by identifying which rate is applied to the usage for the specific time period, e.g., if you set Season 1 Weekend time intervals as all Off Peak, then any usage for

Season 1 weekends is charged the Off Peak rate.

You will see the screen shown below.



a. Click on one of the groups to display its settings on the right side of the screen.



b. Click in the Off Peak or On Peak box next to a time range to change its setting. You also have the following multiple selection options:

- You can right-click in the box on the right and select “Set all rate times to either” Off Peak or On Peak.
- You can select multiple time ranges by clicking on the first rate time you want to change, then holding down the Shift key and clicking on the last rate time you want to change: the rate times you selected are now highlighted in blue. Then right-click in the box on the right and select “Set selected rate times to” either Off Peak or On Peak.

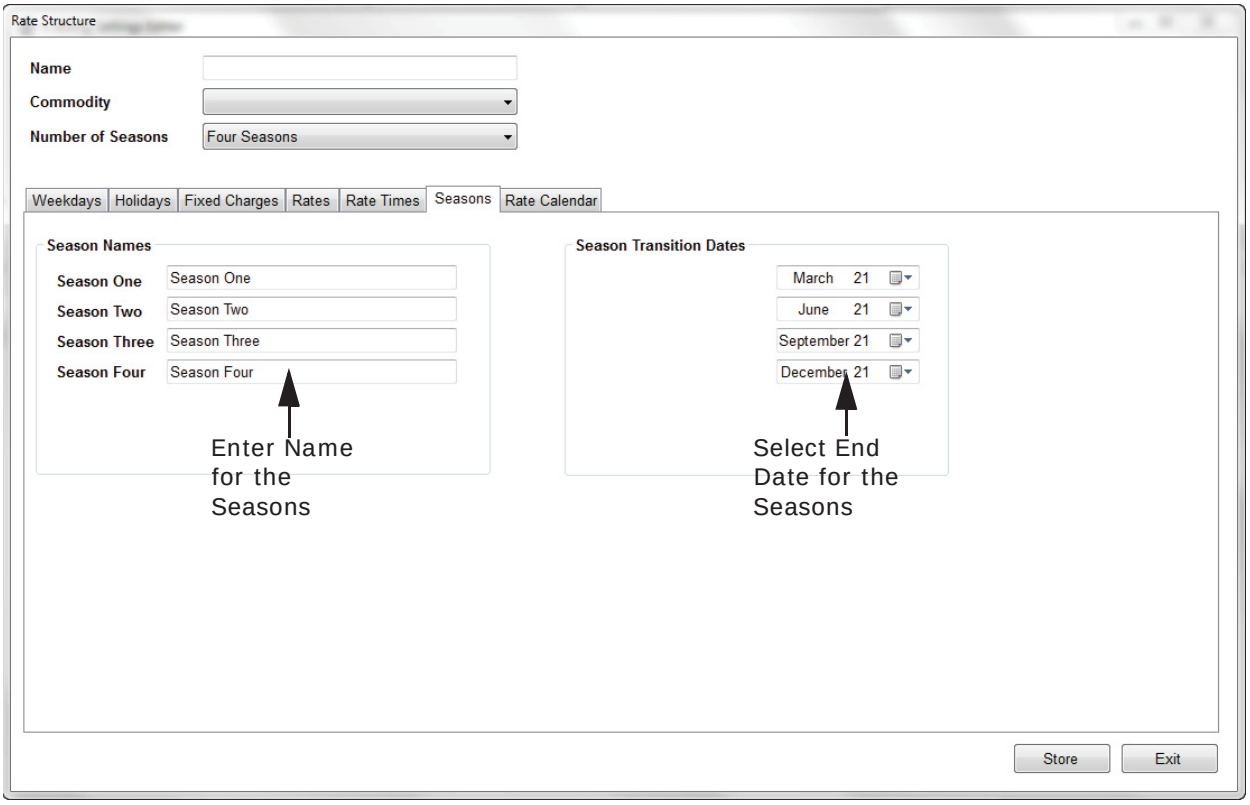
Seasons Tab

Click the Seasons tab to set up the dates for between two and four seasons. The dates for the seasons determine what rate is charged for usage in that time period. The rates are set up in the Rate Times tab, which was just explained. So,

for example, if you set up two seasons, and you set a Weekday On Peak rate for Season 1 and a different Weekday On Peak rate for Season 2, the program checks the date of usage to see which rate should be applied.

You will see the screen shown below.

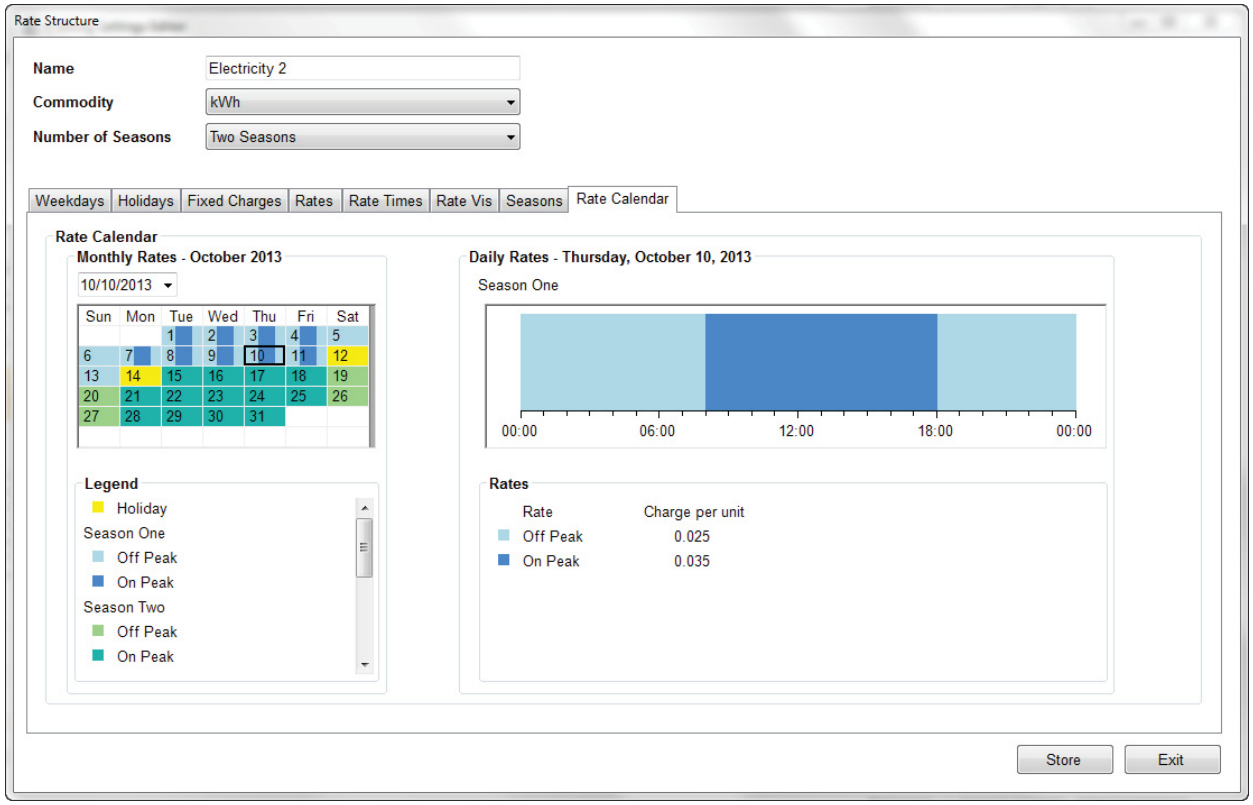
NOTE: You will only see the Seasons tab if you selected more than one season.



a. Click in the pull-down menus to display a calendar you use to select the end date for each season. This is the last day the rates for that season are applied to usage.

b. In each entry field to the right of the season, specify the name to show on the bill for that season.

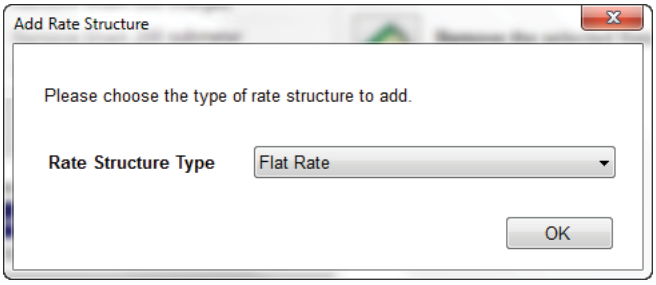
Rate Calendar



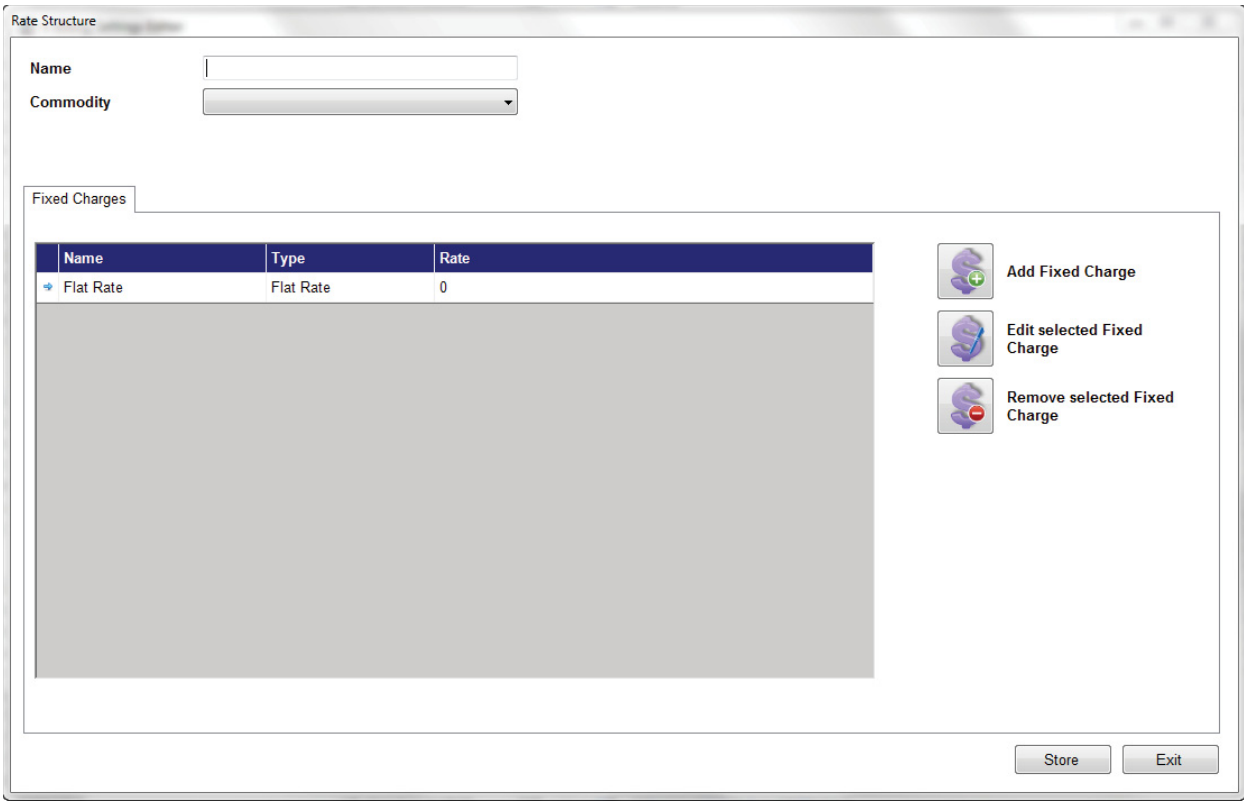
Review your rates on the rate calendar to make sure you have everything set up correctly.

5. Click Store to save your rate structure. Instructions for setting up a Flat Rate schedule follow. If you do not need this information, continue to step 8.

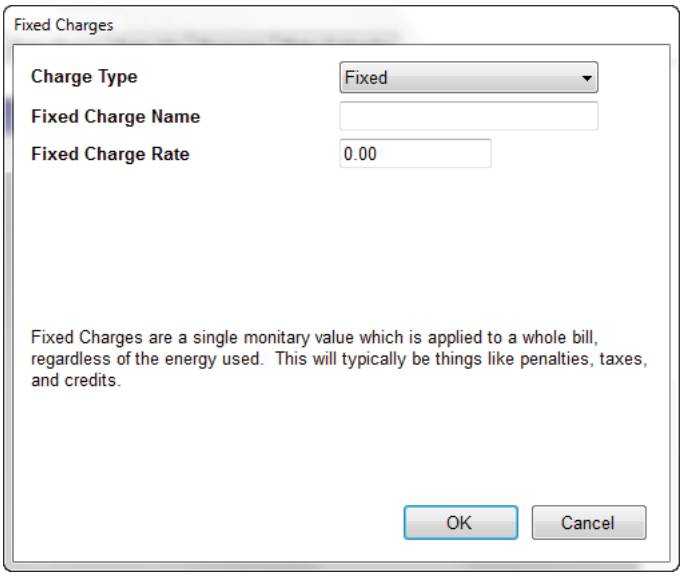
6. To set up a rate structure with a single rate only (no On Peak/Off Peak, Seasons, Weekend/Weekday or Holiday rates), select Flat Rate from the Add Rate Structure pull-down menu.



You will see a screen similar to the Flat Rate tab of the Seasonal Schedule.



a. Enter a Name for the Flat Rate, select the Commodity it will be applied to from the pull-down menu, and click Add Fixed Charge to enter the rate.


Fixed Charges
Charge Type
Fixed
Fixed Charge Name
Fixed Charge Rate
0.00
Fixed Charges are a single monitary value which is applied to a whole bill, regardless of the energy used. This will typically be things like penalties, taxes, and credits.
OK
Cancel

b. Select the Charge Type from the pull-down menu. You can select Fixed, **Peak Demand**, Flat Rate, Tax, or Coincidental Peak Demand:

- Fixed: select this to add a single charge that is added to the bill when it is generated, regardless of the usage amount, e.g., processing fee.

- **Peak Demand**: select this to enter a **Peak Demand surcharge**, which is an additional charge applied to Peak (highest amount) usage during the billing period (see step c).

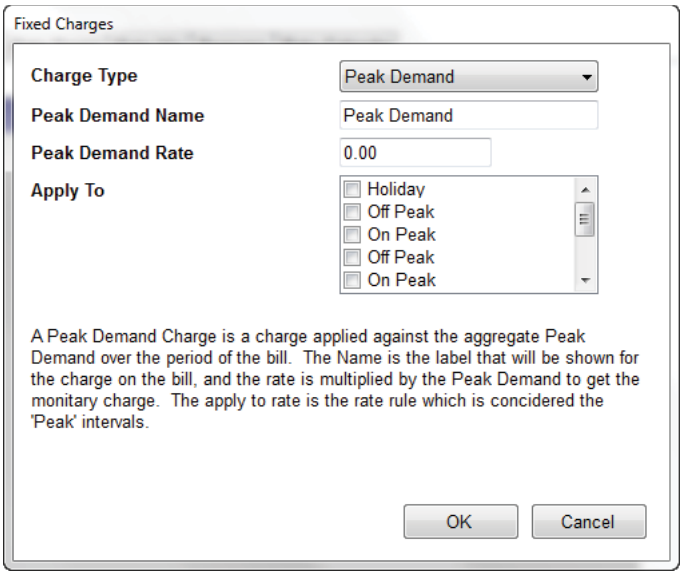
- Flat Rate: select this to add a charge that applies to the total usage, e.g., a Generation charge or Fuel surcharge. This rate is multiplied by the total usage when the bill is generated.

- Tax: select this to enter a tax percentage that will be applied to the total when the bill is generated, i.e., multiplied by the total dollar amount on the bill for the commodity, and added to the bill.

- Coincidental Peak Demand: select this to enter a charge that will be applied against the Peak Demand over the period of the bill, where the Peak Demand is computed based on the configured Utility meter, rather then the meters at the location. See pages 5-17- 5-18 for a detailed explanation of Coincidental Peak Demand.

c. For every charge type *except* Peak Demand and Coincidental Peak Demand, you then enter the Charge Name and Rate (or Percentage for Tax).

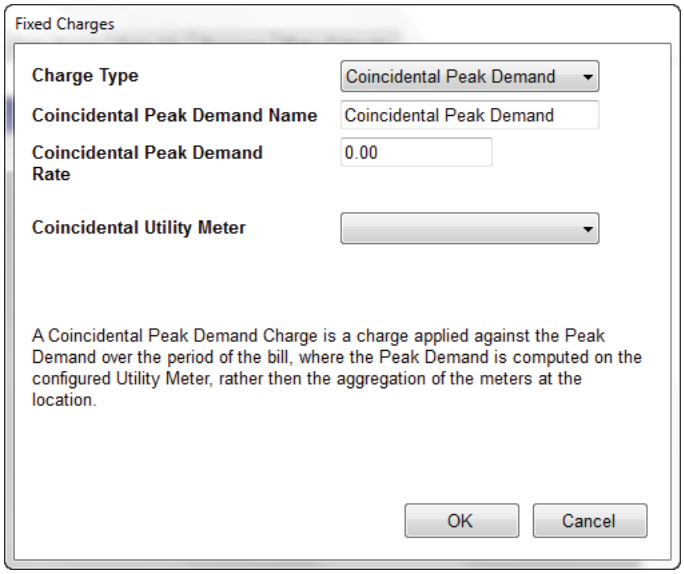
- If you select **Peak Demand**, the screen changes as shown below.


Fixed Charges
Charge Type
Peak Demand
Peak Demand Name
Peak Demand
Peak Demand Rate
0.00
Apply To
Holiday
Off Peak
On Peak
Off Peak
On Peak
A Peak Demand Charge is a charge applied against the aggregate Peak Demand over the period of the bill. The Name is the label that will be shown for the charge on the bill, and the rate is multiplied by the Peak Demand to get the monitary charge. The apply to rate is the rate rule which is concidered the 'Peak' intervals.
OK
Cancel

The charge's name defaults to **Peak Demand**, though you can change it if you want. The name appears on the bill next to the **Peak Demand charge**.

Enter the **Peak Demand rate**, and click the checkbox(es) (rate periods) you want the Peak Demand rate applied to. You can apply it to Holiday, Peak and/or Off Peak usage. The Peak Demand rate you enter will be applied to peak demand in the selected rate periods when the bill is generated, i.e. the Peak Demand usage is multiplied by the Peak Demand rate to get the Peak Demand charge.

- If you select Coincidental Peak Demand, enter a Name and Rate for the Coincidental Peak Demand, and then choose the Utility meter from the pull-down menu.


Fixed Charges
Charge Type
Coincidental Peak Demand
Coincidental Peak Demand Name
Coincidental Peak Demand
Coincidental Peak Demand Rate
0.00
Coincidental Utility Meter
A Coincidental Peak Demand Charge is a charge applied against the Peak Demand over the period of the bill, where the Peak Demand is computed on the configured Utility Meter, rather then the aggregation of the meters at the location.
OK
Cancel

d. Click OK to save your settings and return to the Fixed Rate screen. Your new charge is listed on the screen.

NOTES:

- To edit a charge, click on the charge in the list and click the Edit Selected Fixed Charge icon. You will see the same screen as when you are adding a fixed charge, but it will show the charge's settings. Change what you want and click OK to save the changes.

- To delete a charge, click on the charge in the list and click the Remove Selected Fixed Charge icon. You will see a Confirmation window asking if you are sure you want to remove the charge - click Yes to remove; click No to keep the charge.

7. Click Store to save your Flat Rate rate structure.

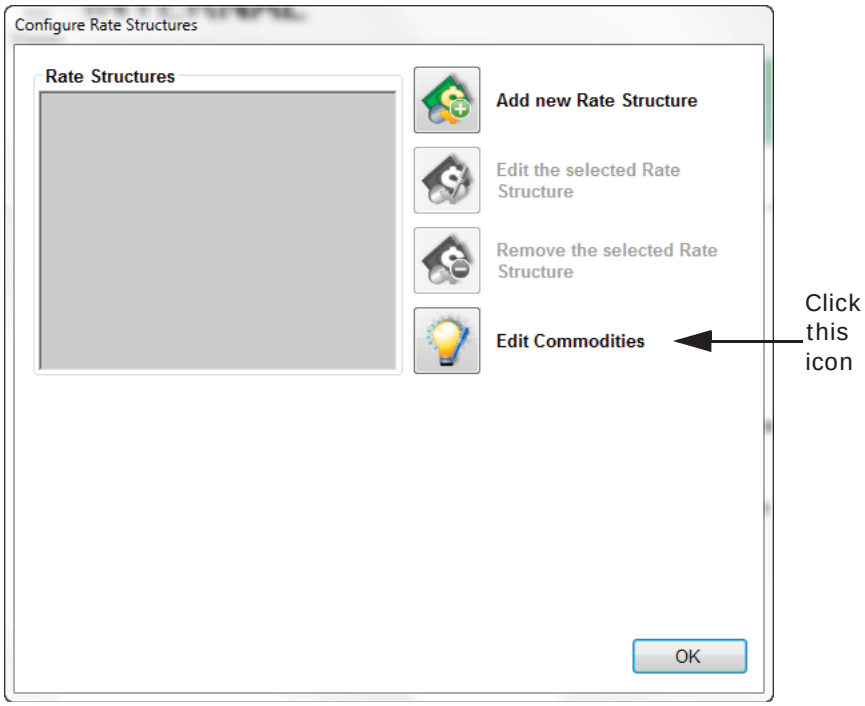
8. Click Exit to return to the Configure Rate Structures screen. Your new rate structure is now listed in the Rate Structures box and there is a new box called Locations That Use This Rate at the bottom left of the screen. Once you assign customer locations to this rate, they are listed in the box.

NOTES:

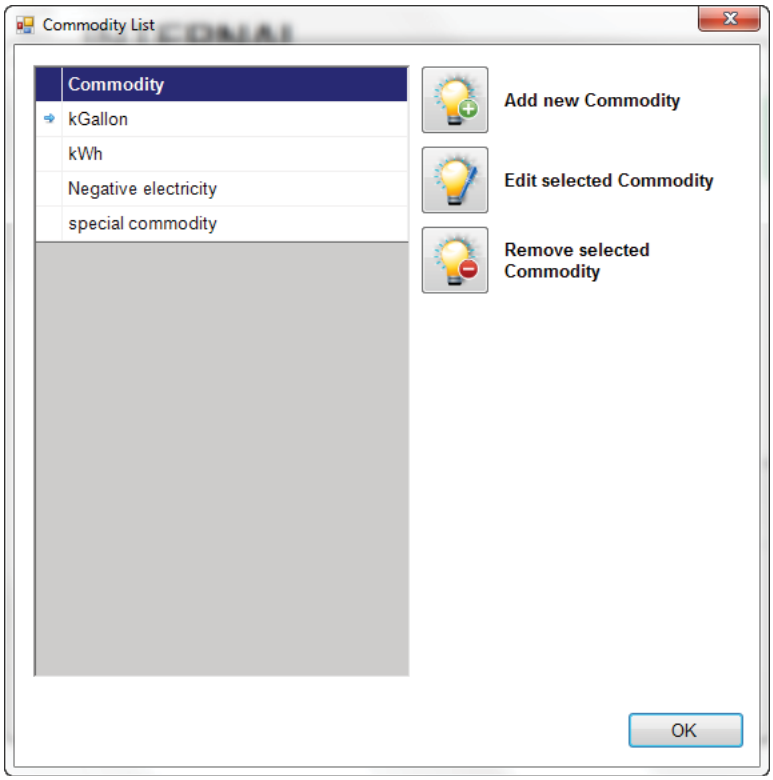
- To edit an existing rate structure, click on the rate structure and click the Edit the Selected Rate Structure icon. You will see the same screen as when you are adding a rate structure, but it will show the rate structure's settings. Change what you want and click OK to save the changes. Any new bills generated will use the changed settings; previously generated bills will not.

- To delete a rate structure, click on the rate structure and click the Remove the Selected Rate Structure icon. You will see a Confirmation window asking if you are sure you want to remove the rate structure - click Yes to remove; click No to keep the rate structure. Removing the rate structure also removes it from any locations using it.

- You can also add, edit, or delete commodities from the Rate Structures screen.
  a. Click the Edit Commodities icon.



b. You will see the screen shown below. The existing commodities are listed in the box on the left. To add a commodity, click the Add New Commodity icon; to edit a commodity, click on the commodity in the list and click the Edit Selected Commodity icon. In both cases you will see the same Edit Commodity screen that was explained earlier in this section (beginning on page 5-8).

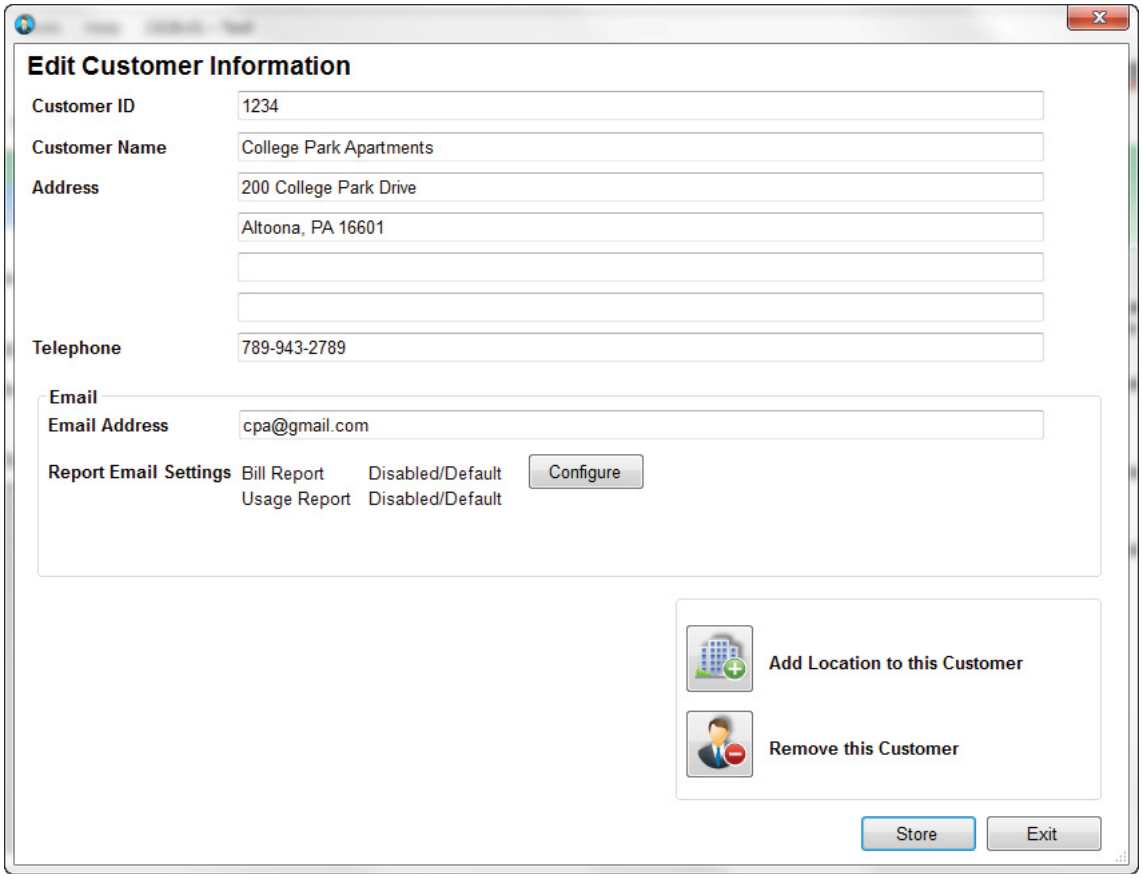


c. To delete the commodity, click on the commodity in the list and click the Remove Selected Commodity icon. You will see a confirmation window - click Yes to delete the commodity; click No to keep the commodity. Removing a commodity will remove all of the rate structures that use the commodity.

5.3: Set Up a Customer

Next you set up customer information. The customer is the person who will be receiving the bill from the provider. The customer can have one location or multiple locations. The software will generate a bill for each location for this customer.

1. From the E-Billing Settings Editor main screen, click the Add Customer icon. You will see the screen shown below, but there will be an Apply icon in place of the other icons.



2. Enter the following:

- Customer ID: enter a unique identifier for the customer, which will be used to identify this customer.
- Customer Name: enter the customer's name (this does not have to be unique).
- Address: enter the customer's billing address.
- Telephone number

- Email Address

- Report Email Settings: after you click Apply you will be able to set up this field.

3. Click the Apply icon to save your changes. The message “Values Saved” displays in the bottom left of the screen, and two new icons appear on the screen - Add Location to This Customer and Remove This Customer (shown on the previous screen).

   NOTE: If you want to delete the customer, click the Remove This Customer icon. You will see a confirmation window - click Yes to delete the customer; click No to keep the customer. Removing the customer will delete all locations and meters for the customer.

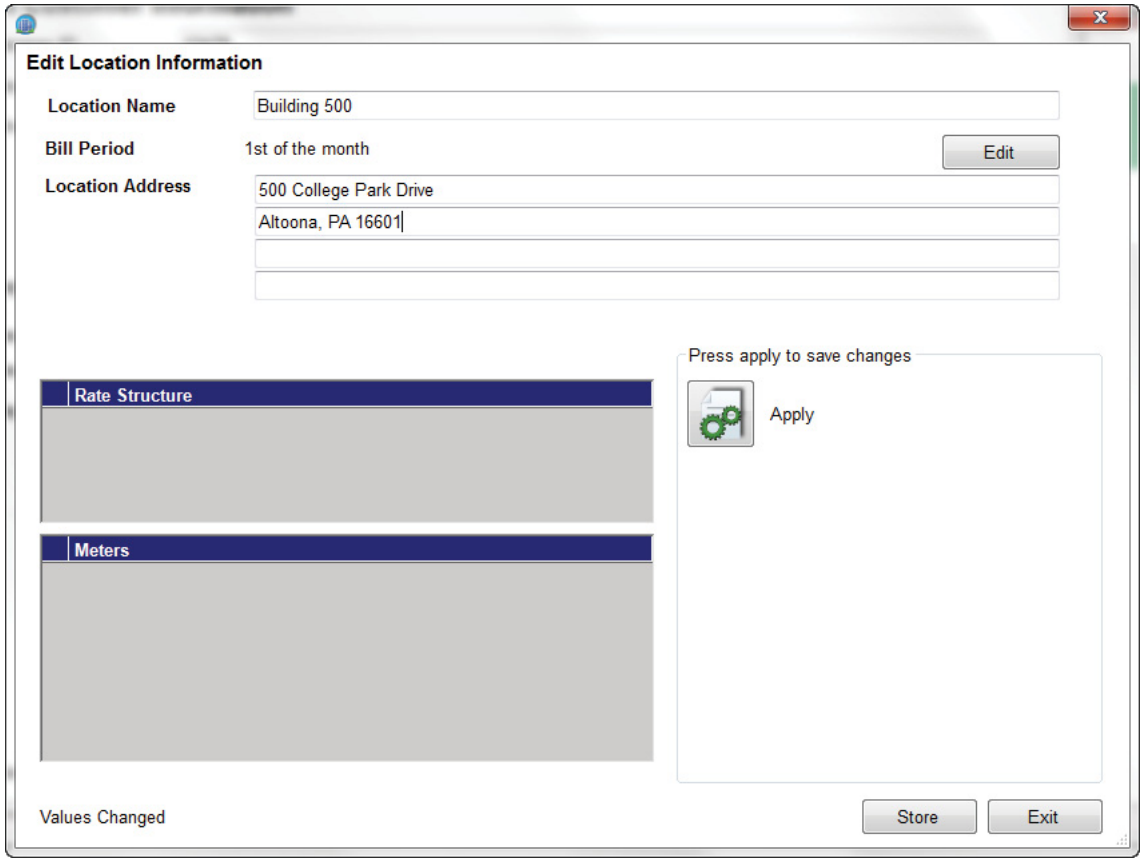
   After clicking Apply, you will also see a Configure button next to Report Email settings. Click the button to display the Report Email Settings screen shown on page 5-5. Use the screen to set up the email report settings for this customer.

4. Click Add Location to This customer and continue to the next section.

5.4: Set Up a Location and Add Meters to It

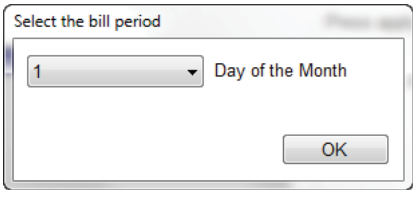
Once you have set up a customer you enter the customer’s billing locations. A location is the physical address, the actual location, that is consuming the power or other commodity. Customers can have multiple locations. They can also have a rate structure for each commodity being billed for at a location, e.g., Energy and gas. Each location can have one meter or multiple meters attached to it. If there is more than one meter, the software will aggregate the usage of those meters to generate a total billing amount, peak demand, and usage report.

1. When you click the Add Location to This Customer icon, you see the screen shown below. Use this screen to set up information for the billing location.



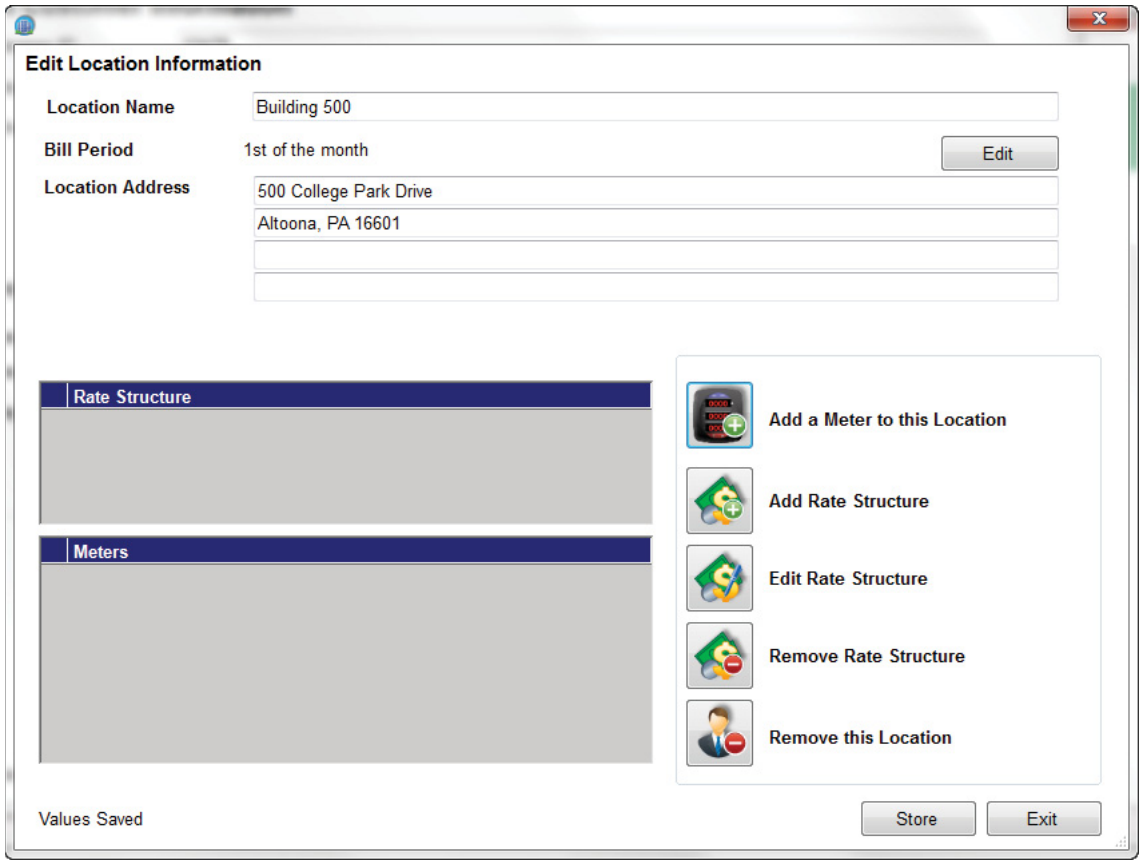
2. Enter a unique name for the location in the Location Name field.

3. Click Edit next to Bill Period to select a billing period. The billing period is the day of the month on which the bill is computed. You will see the screen shown below.



4. From the pull-down menu, select the day of the month you want the billing period to begin and then click OK. The Bill Period screen closes and the day you chose is displayed in the Edit Location Information screen.

5. Click Apply to create the location. The screen changes to offer more options - now you can add meters and rate structures. See the example screen shown below.



6. The new options let you:

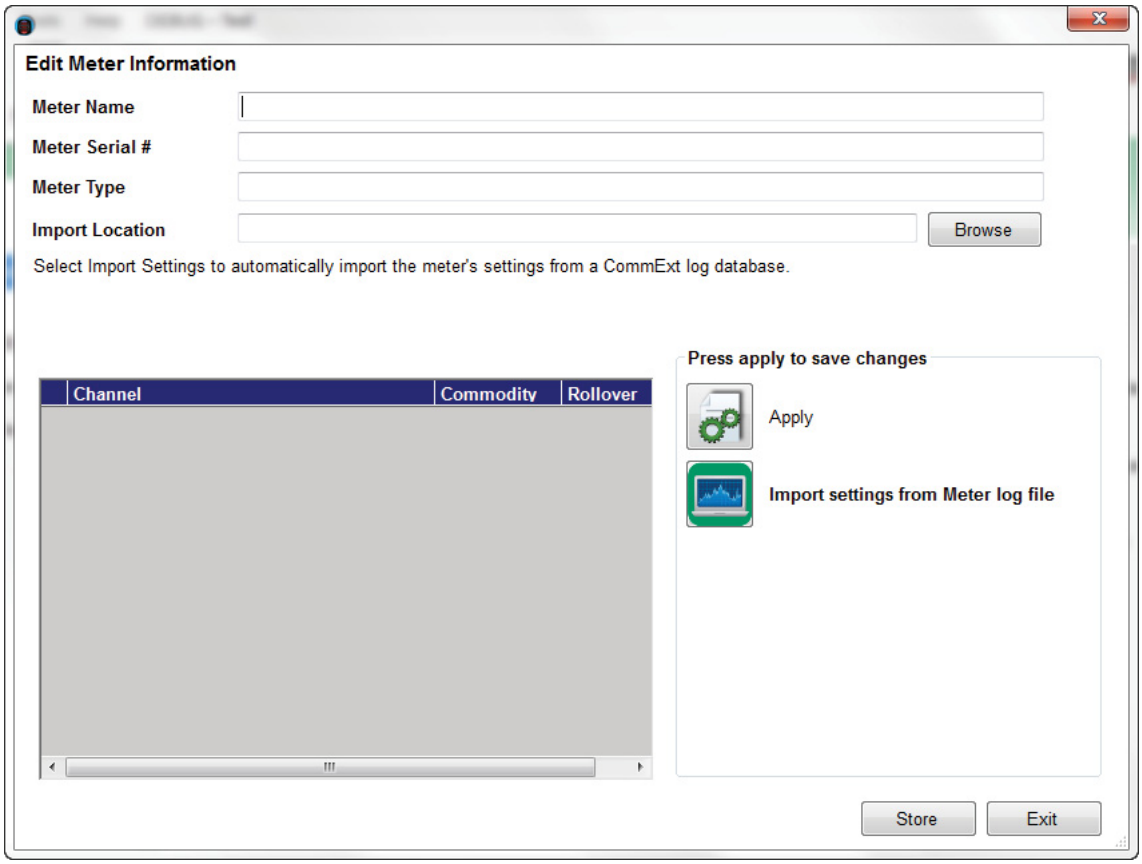
- Add a meter to this location
- Add a rate structure to this location
- Edit a rate structure for this location
- Remove a rate structure from this location
- Remove this location

In addition, there are two boxes on the screen - one for Rate Structures assigned to this location, and one for meters assigned to this location. When you are adding a new location, these boxes will be empty, but if you are editing an existing location, there will be entries in the boxes.

When you set up a location, you add all of the meters at the location, and add one rate structure for each commodity being billed for.

Add a Meter

7. Click the Add a Meter to this Location icon. You will see the screen shown below.



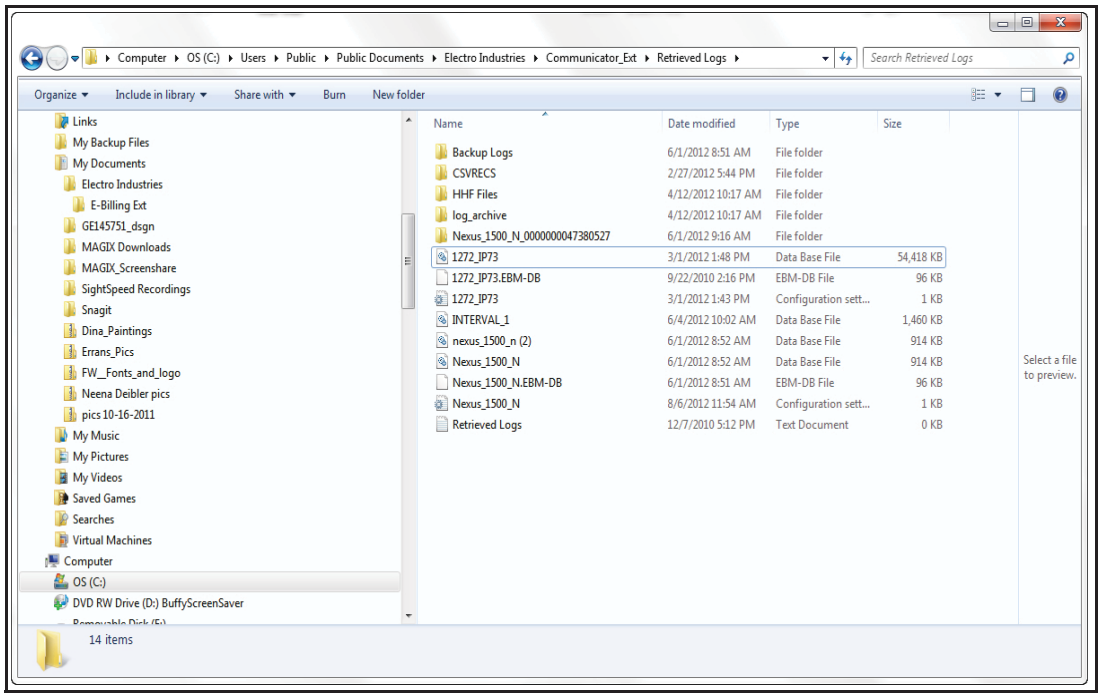
8. Enter the following:

- Meter Name: enter a unique identifier for the meter. This name must be unique across all locations. It is used to identify the meter's billing data.
- Meter Serial #: enter the meter's serial number.
- Meter Type: enter the meter type (Nexus® or Shark®).

9. Import Location is the place where the meter's billing log data is stored (e.g., C:\Users\Public\Documents\Electro Industries\Communicator_EXT\Retrieved Logs). This log data file contains the raw values the E-Billing EXT™ application imports in order to generate its billing database, i.e., Energy usage or pulse

accumulations. Refer to Figure 4.1 for a depiction of the data flow between applications; see Chapter 2 if you need to refresh your understanding of setting up the meters' historical logs for E-Billing EXT™ application use.

Click Browse to locate the meter's log database file.You will see a screen that lets you locate and select the log file. See the example screen shown below.



NOTES:

- The log database file comes from either the Communicator EXT™ application (*.db: the database created when logs are retrieved using the Communicator EXT™ application) or the HMI EXT™ application (*.dbf: the billing data database created by the HMI EXT™ software; see that software's documentation for details).
- See Section 9.1 for file importing suggestions.

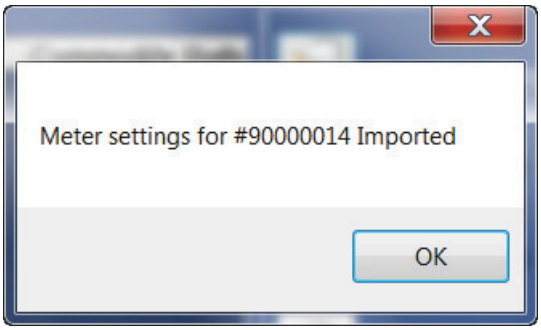
WARNINGS!

- Be careful when selecting the location to import from. Importing is done by the E-Billing Settings Editor software, and if you select a location that is not accessible (or invalid), you may not be able to import the data.
- If you change the import location file, it will wipe out the selected channels. You will have to select the channels you want to import, again.

10. When you find the file you want to use, click Open. The screen closes and you see the Edit Meter Information screen. The log file's path is now displayed on the screen next to Import Location.

11. Once you've selected the file to import from, the application will verify that it contains log items that can be linked to commodities. This includes Energy, e.g., Total Watt-hours, and pulse accumulations, e.g., a Digital Input channel.

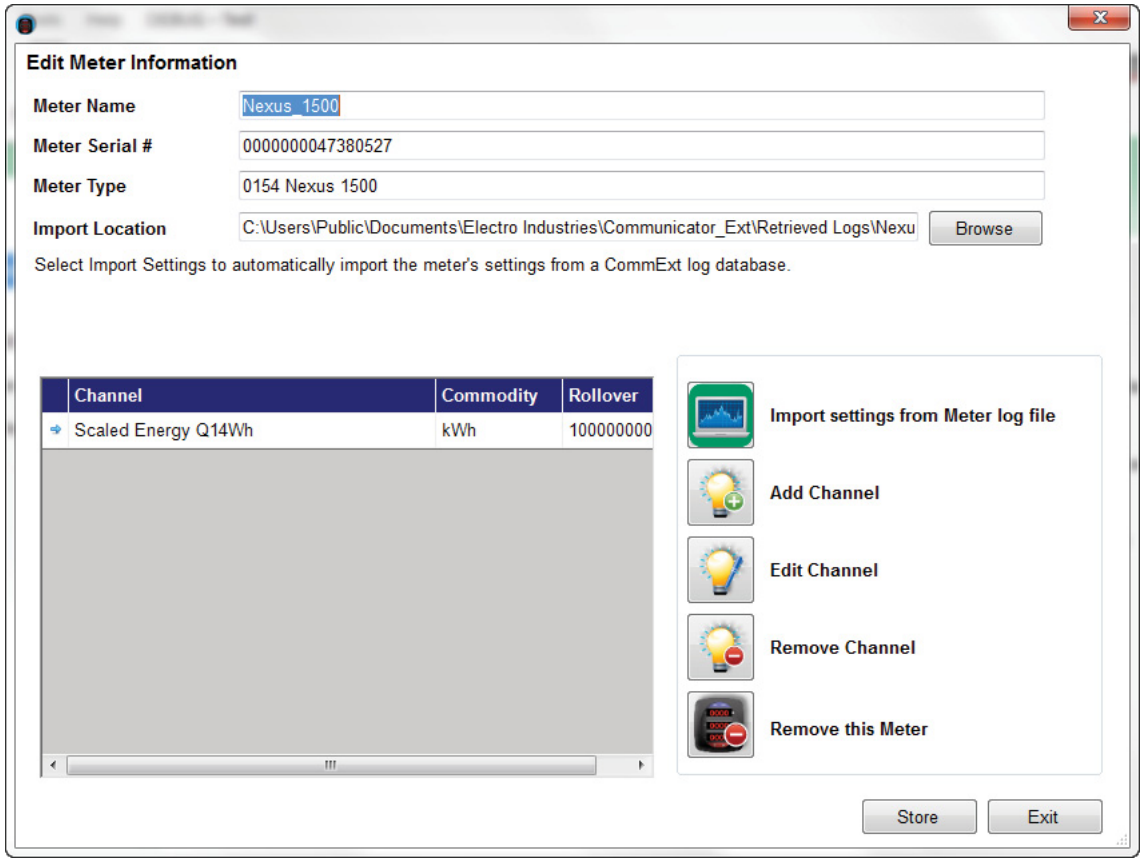
12. If you are using a Communicator EXT™ log database, click the Import Settings from Meter Log File icon (this function is not applicable to HMI EXT™ databases). You will see the message window shown below. It tells you that the meter settings were imported from the meter with the serial number listed in the screen. Click OK to close the window.



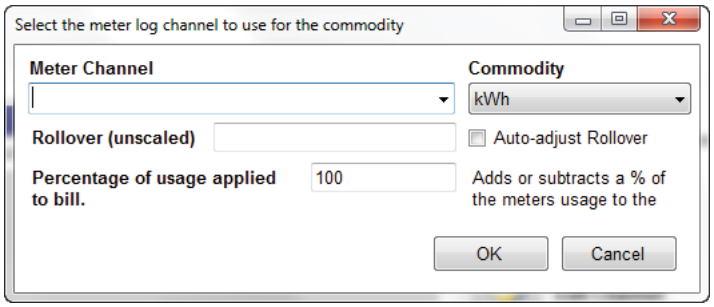
NOTE: The Import Settings function will only fill in information that has not already been entered. For example, if you have already filled in the Meter Name, it will leave that as is. If you want to get the information from the database, but have already entered values, clear those entries before clicking the Import Settings from Meter Log File icon.

TIP: EIG highly recommends importing all the meter configuration data. This automated tool makes the meter configuration task much simpler.

13. Click the Apply icon to create the meter. The Edit Meter information screen re-displays with additional options - now you can choose the channels to import. See the example screen shown below.



14. The Channel icons let you add, edit, or remove channels. A channel is a single type of data item from the meter's log database, e.g., Watt-hours Received. You add the channel and link it to a commodity for use in generating bills; e.g., the Watt-hours Received channel linked to the kWh commodity.
Click Add Channel. You will see the screen shown below.



15. Select the channel from the pull-down menu. The channels you see are the data values that you set up for this log using the Communicator EXT™ application. They are channels for Energy and/or pulse accumulations. See Section 5.4.2 for channel setting instructions for external databases, such as an HMI EXT™ application database.

16. Select the commodity from the pull-down menu. Once the data has been imported, it will be tracked by the commodity.

    - You can select only one channel per commodity, per meter, e.g., Total Watt-hours for kWh.
    - A meter can have multiple commodities. See the diagram below.

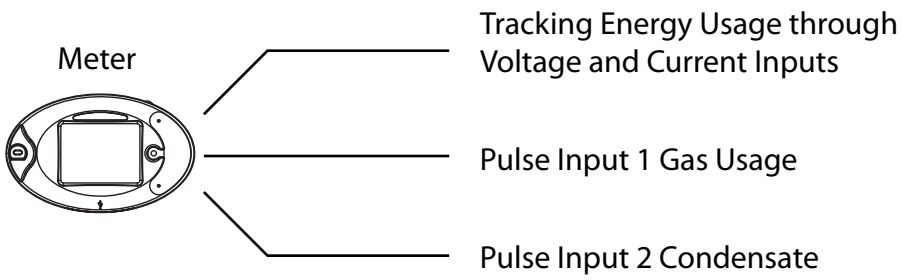


Figure 5.3: Example of Meter Measuring Multiple Commodities

17. Auto-adjust Rollover is the default selection on the screen. The unscaled rollover field will display the settings from the Communicator EXT software for this channel, if you click on the Auto-adjust Rollover box to de-select it. You can edit the value in the unscaled rollover field.
    NOTE: Manually setting the rollover field is only applicable to older Nexus® 1250 models or HMI EXT™ application values.

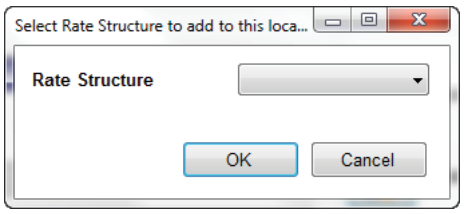
18. The Percentage of Usage Applied to Bill field lets you add or subtract a portion of the usage for this channel, for this meter, to the bill when it is generated, allowing for credits for certain meters. You might want to use this if you want to remove a meter from being billed for this usage. For example, if you have a main meter at a location, e.g., a meter attached to the building's utility feeder, and submeters in individual tenant units, you may want to bill for main meter usage, comprised of things like hallway and outside lighting, on a separate bill from the tenant billing. To do this you would put 100% for the usage field for the submeters and -100% for the usage field for the meter attached to the utility feeder.

19. When you have made your choices, click OK. The channel, commodity, and roll-over value are now shown in the Channel/Commodity/Rollover box in the Edit Meter Information screen.
    NOTE: To edit a channel, click on it in the box and click the Edit Channel icon; to remove a Channel, click on it in the box and click the Remove Channel icon.

20. If you want to add a channel for another commodity, follow the same procedure. When you are done selecting channels, click Store to save the settings.

NOTE: This screen also gives you the option of removing the meter; to do so, click the Remove This Meter icon. Removing the meter will delete all of the imported data for the meter.

21. Click Exit to return to the Edit Location Information screen. Add a rate structure to the Location by clicking the Add Rate Structure icon. You will see the screen shown below.



22. Select the rate structure you want from the pull-down menu and click OK to close the screen.
    NOTE: You can also select Create New to add a new rate structure. Follow the instructions for adding a rate structure in Section 5.2.

5.4.1: Meter at Location Example

If you have two meters at a location, for example, each metering a utility feeder, you would set up both meters for the location, following the instructions in this section. When you import data, the software will import all of the usage data for both meters and when the bill is generated the usage for both meters will be totalized to arrive at the billed dollar amount. See the diagram on the next page.

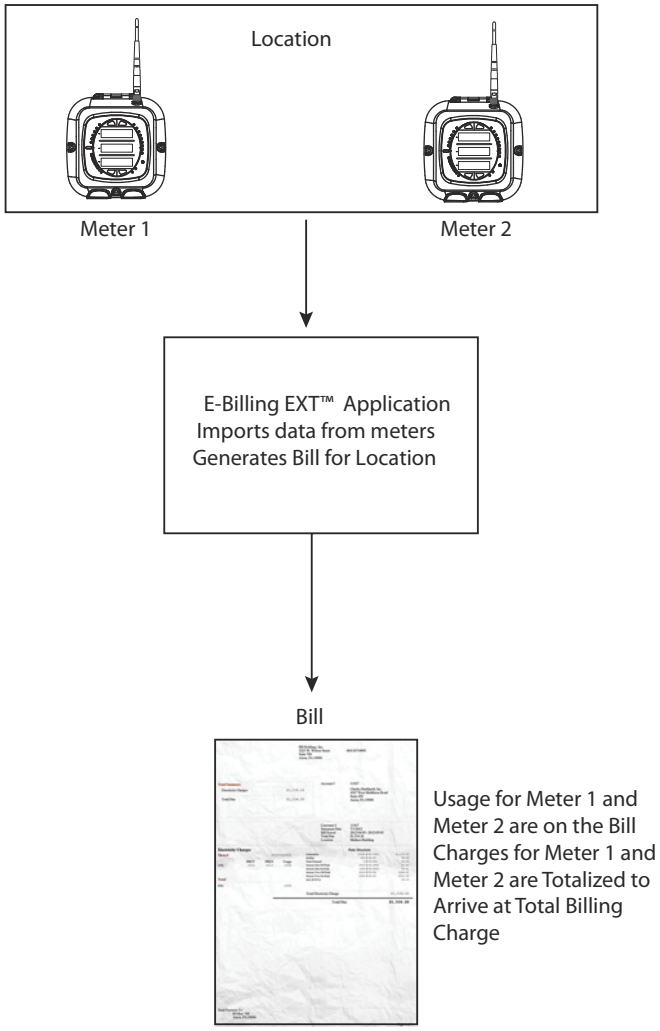

Location
Meter 1
Meter 2
E-Billing EXT™ Application
Imports data from meters
Generates Bill for Location
Bill
Usage for Meter 1 and Meter 2 are on the Bill Charges for Meter 1 and Meter 2 are Totalized to Arrive at Total Billing Charge

Figure 5.4: Totalizing Meters

5.4.2: Importing External Data

If you are setting up the E-Billing EXT™ application for use with external data (as opposed to the Communicator EXT™ application log data), such as an HMI EXT™ application database file, there are some unique considerations. Below is an example of an HMI EXT™ application database file formatted for use with the E-Billing EXT™ application.

	A	B	C	D
1	DATE	TIME	KWHR	CONDENSATE
2	1/1/2012	0:00 AM	433.6	25538607
3	1/1/2012	0:15 AM	438.0	25538607
4	1/1/2012	0:30 AM	442.5	25538606
5	1/1/2012	0:45 AM	446.9	25538606
6	1/1/2012	1:00 AM	451.4	25538605
7	1/1/2012	1:15 AM	455.8	25538605

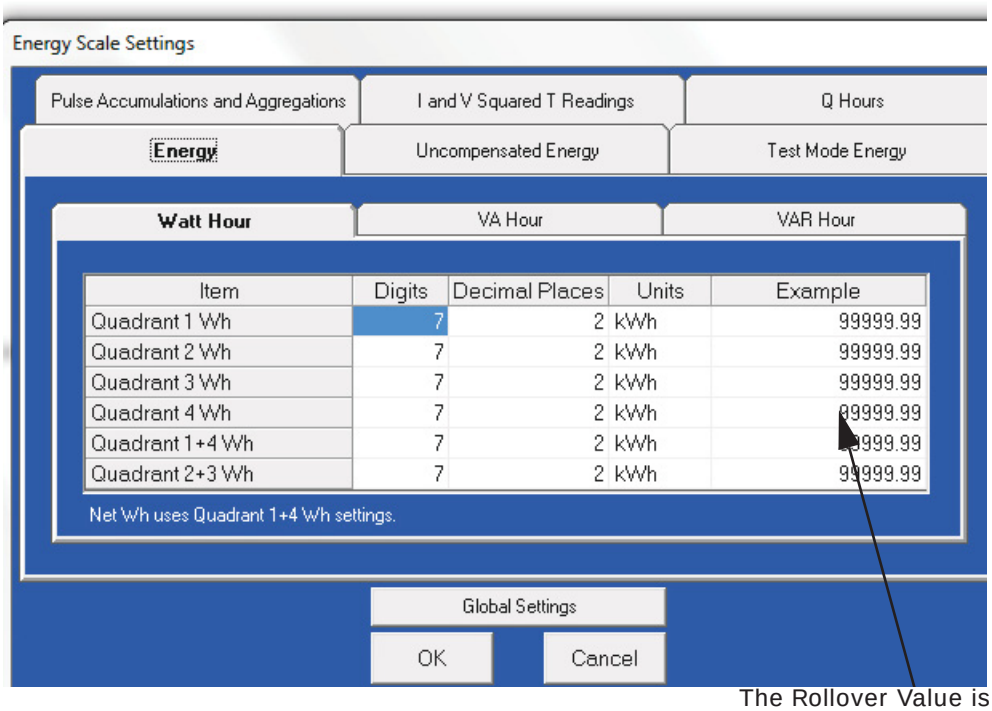
- The database file must have four fields:
    - DATE: the date of the record formatted as yyyy/mm/dd
    - TIME: the time of day of the record formatted as hh:mm:ss
    - KWHR: the Energy usage in kilo-watt-hours
    - CONDENSATE: this field is a pulse accumulator channel, intended for condensate (steam) pulses. You can assign this channel to other commodities, such as gas or water, in the E-Billing EXT™ application - see Section 5.4 for instructions. This field is assumed to be in kilo scale.
- The optimal interval for the data is 15 minutes, time-stamped on the minute.
- The database file must be a dBase IV format database. It can be opened in Excel, but should not be saved in Excel as this can cause database corruption which will prevent the file from working with the E-Billing EXT™ application.
- The file name should be eight characters with an extension of three characters, e.g., Nx1500_2.dbf.

NOTES:

- HMI EXT™ databases separate the original meter from the data, so there is no way for the application to determine the rollover value. Consult the HMI

EXT™ configuration and documentation to determine the correct value to enter. Your system integrator will have to provide you with the Energy or other commodity rollover value.

- If no rollover is programmed in the HMI™ EXT application, the E-Billing EXT™ application rollover value should be the same as the rollover value in the meter's device profile, set in the Communicator EXT™ application (in the meter's Device Profile>Revenue and Energy Settings>Energy Scaling).



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6: Step 6 - Importing Data

6.1: Import Meter Data

Before the E-Billing EXT™ application can generate bills, the meters' log database files must be imported. During the import the application scans the files for new data, and imports it into the database cluster, which is the collection of databases the E-Billing EXT™ Database Server provides access to. While scanning the files and importing, the application also analyzes the data for errors, and computes interval and Demand values; for example highest Energy use for a selected time period.

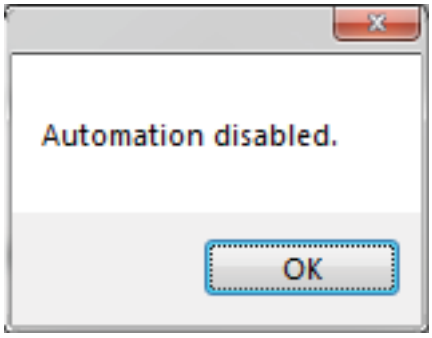
WARNING! Importing uses the Import location you set up for the meter. Because the import is done by the software, this location must be accessible to the software doing the import. If it is not (such as a network drive that is disconnected, or a location that was configured on another computer), the import for that meter will fail.

Once data has been imported, you can modify it to correct for problems in the data (instructions for this are given in Section 6.1.7). This will automatically cause the computed values (Interval and Demand) to be regenerated. Keep in mind, however, that the changes are recorded, and that any bill which contains modified values is marked to indicate that fact.

6.1.1: Automatic Data Import

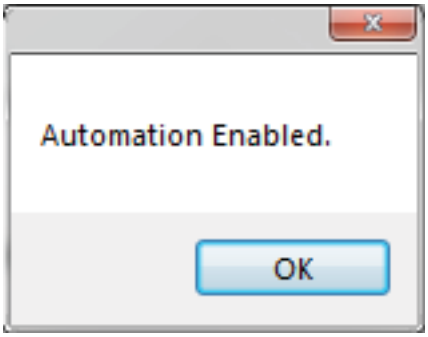
Through E-Billing EXT™ Application: Only Available for Network Mode

If you are running the application from a Network server, data import is automatically enabled. Auto import occurs every hour. If you are changing settings and want to suspend auto import for a time, click Tools>Import>Disable Auto Import from the E-Billing Settings Editor main screen. You will see the message window shown below.



Click OK to close the window.

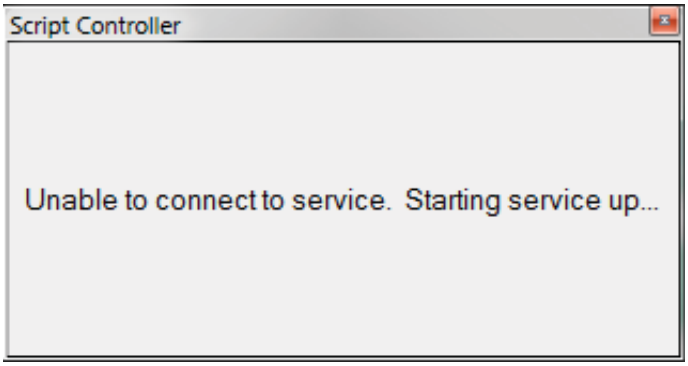
To enable Auto Import again, click Tools>Import>Enable Auto Import from the E-Billing Settings Editor main screen. You will see the message window shown below.



Click OK to close the window.

NOTE:

- If there is an error and auto import is not running, the application ties to connect to the automation service. You will see the screen shown below.



User Account Control, a Windows® Operating system service, will start and you will be asked to enable the automation service. Once you select “Yes,” the service should be connected to and started. Auto import will be enabled.

If the application cannot connect to the automation service, e.g., if you are running

the application in Local Only mode, you will see the message shown below.

Script Controller
Failed to connect to automation service after starting it. Verify that it has been installed correctly.

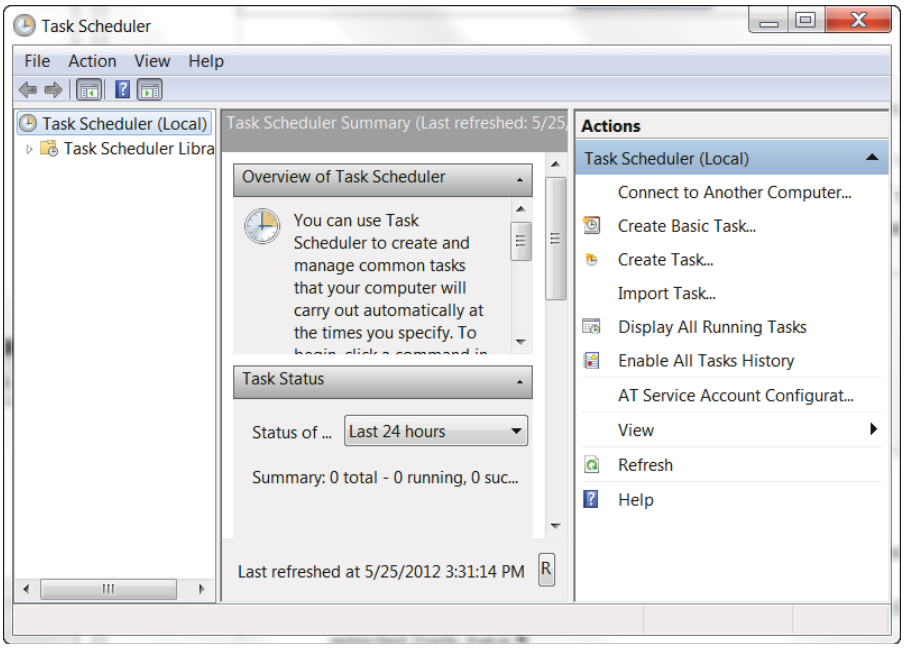
Confirm that you are running the E-Billing EXT™ application in Network mode.

Through Windows® Task Scheduler

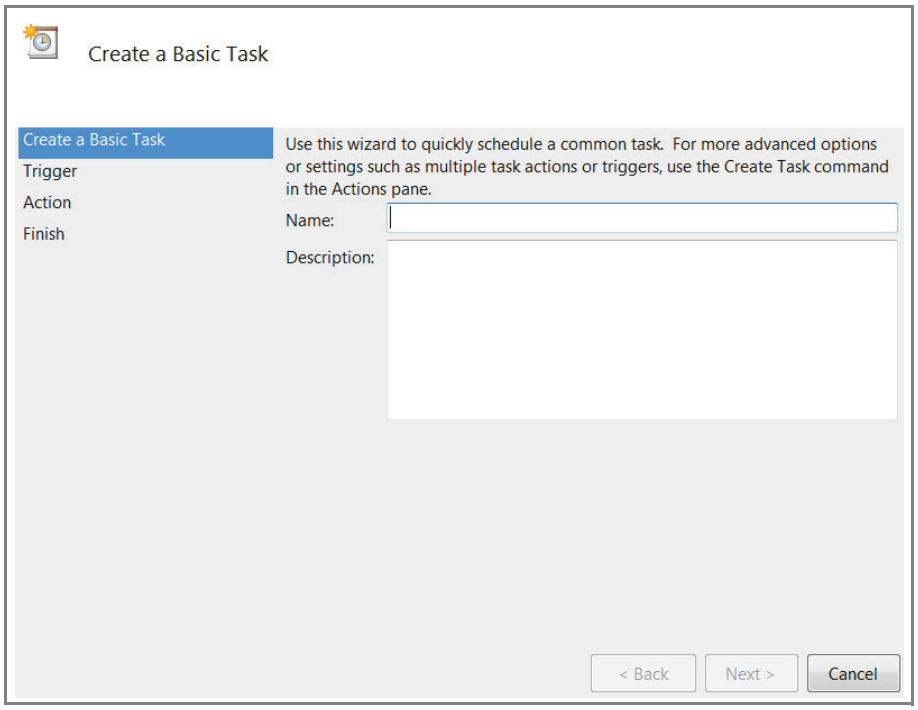
You can also use the Windows® Task Scheduler to set up automatic import. Use this method if you are running the application in Local Only mode.

NOTE: The following instructions are for Windows 7® OS; for Windows XP® OS you access Task Scheduler by clicking Start>All Programs>Accessories>System Tools>Scheduled Tasks; for Windows Vista® OS you access Task Scheduler by clicking Start>Control Panel>System and Maintenance>Administrative Tools>Schedule Tasks.

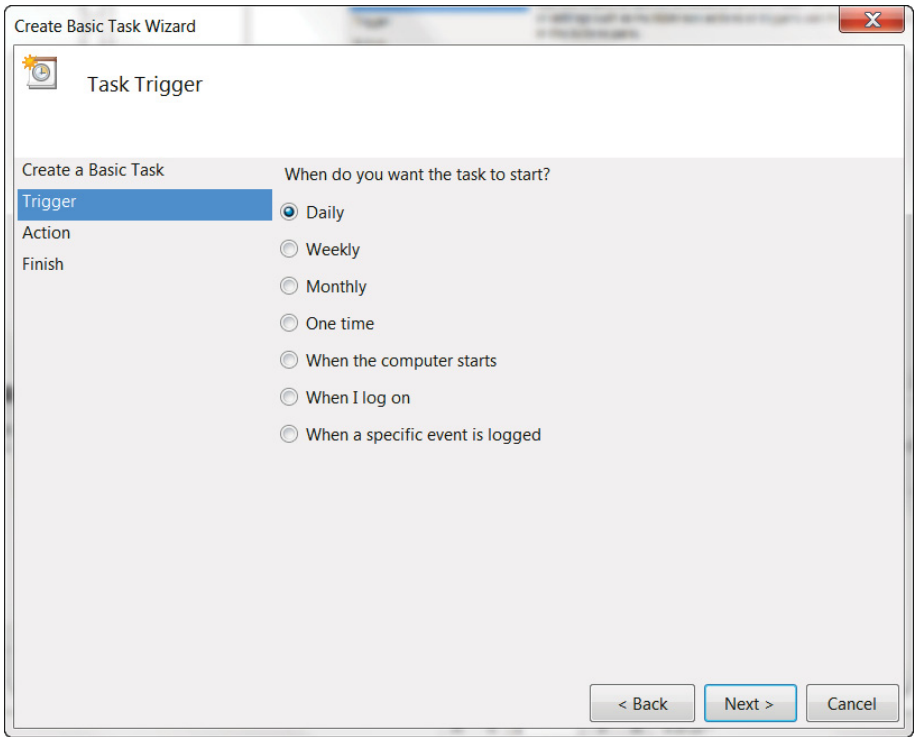
1. Start Windows® Task Scheduler by clicking Start>All Programs>Accessories>System Tools>Task Scheduler. You will see the screen shown below.


Task Scheduler
File Action View Help
Task Scheduler (Local)
Task Scheduler Libra
Task Scheduler Summary (Last refreshed: 5/25
Overview of Task Scheduler
You can use Task Scheduler to create and manage common tasks that your computer will carry out automatically at the times you specify. To
Task Status
Status of ... Last 24 hours
Summary: 0 total - 0 running, 0 suc...
Last refreshed at 5/25/2012 3:31:14 PM
Actions
Task Scheduler (Local)
Connect to Another Computer...
Create Basic Task...
Create Task...
Import Task...
Display All Running Tasks
Enable All Tasks History
AT Service Account Configurat...
View
Refresh
Help

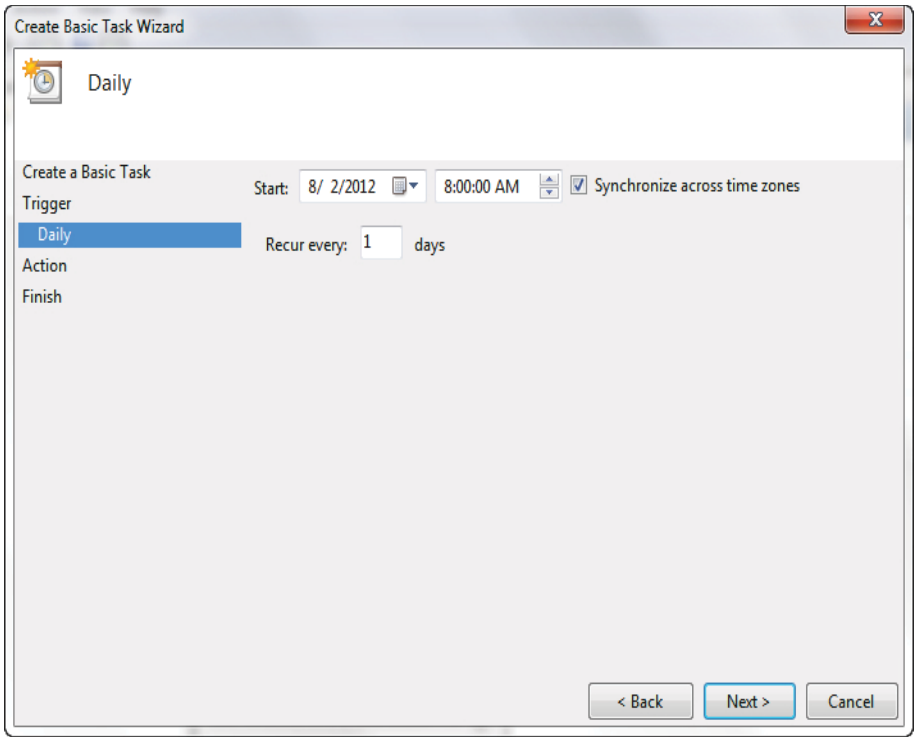
2. Select Create Basic Task. You will see the screen shown below.


Create a Basic Task
Create a Basic Task
Trigger
Action
Finish
Use this wizard to quickly schedule a common task. For more advanced options or settings such as multiple task actions or triggers, use the Create Task command in the Actions pane.
Name:
Description:
< Back
Next >
Cancel

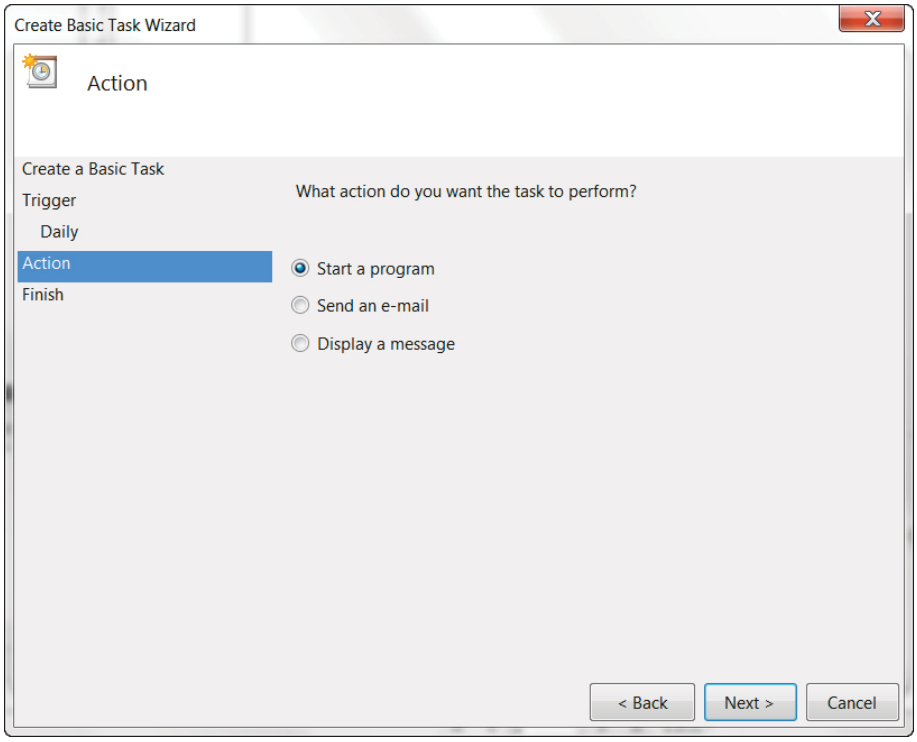
3. Give the task a name, e.g., Import All Logs, and click Next. You will see the screen shown below.



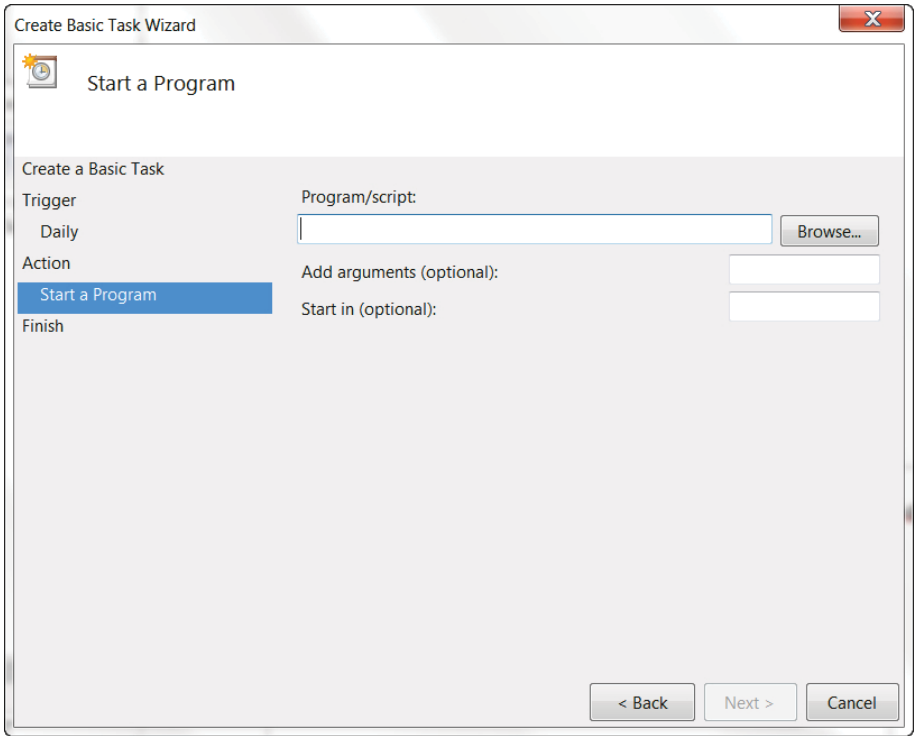
4. Select the interval you want the data to be imported, and click Next.



5. Enter the time you want the import to take place. The example screen is set up for a daily import at 8 a.m. Click Next. You will see the screen shown below.



6. Select the Start a Program radio button for the Action, and click Next. You will see the screen shown below.



7. Do the following:

   a. For the Program/Script, browse to the install location for the E-Billing Ext software, and select the BillSettingsEditor.Master.exe program. For example: "C:\Program Files (x86)\Electro Industries\E-Billing EXT\BillSettingsEditor\BillSettingsEditor.Master.exe"

   NOTE: You must use quotation marks as shown above.

   b. Enter:

   --script --import meter=all

   in the Add arguments field.

   c. Leave the Start in field blank.

   d. Click Next.

8. Click Finish.

9. The import will occur at the specified time, under the current user. Keep in mind the computer must be on, and the user logged in, for the import to run. To configure the computer to automatically turn on, run under a different user (or run no matter what user is logged in), or to configure more complex scenarios, consult the Task Scheduler Help for details.

6.1.2: Import All

You can also perform a manual importing of data. The simplest way to manually import the meter data is with the Import All Logs button, which is located in the E-Billing Settings Editor main screen's Title bar. After you click this button, the software checks every configured meter's Import location for new data, and queues it to be imported. If there is no data to be imported for a meter, the meter is not added to the queue.

It is important that you perform a manual import at least once, to verify you have set everything up correctly.

An import screen appears on your PC during the import process. It displays the list of meters which are to be imported, and the status of the current import. If any import fails, it is flagged in red, and a list of the errors is displayed on completion. When an import is completed successfully, it will display "done," and disappear from the list.

At any time, you can click Abort to cancel the import. This will stop the importing of all the queued items except for the current one, which will run to completion.

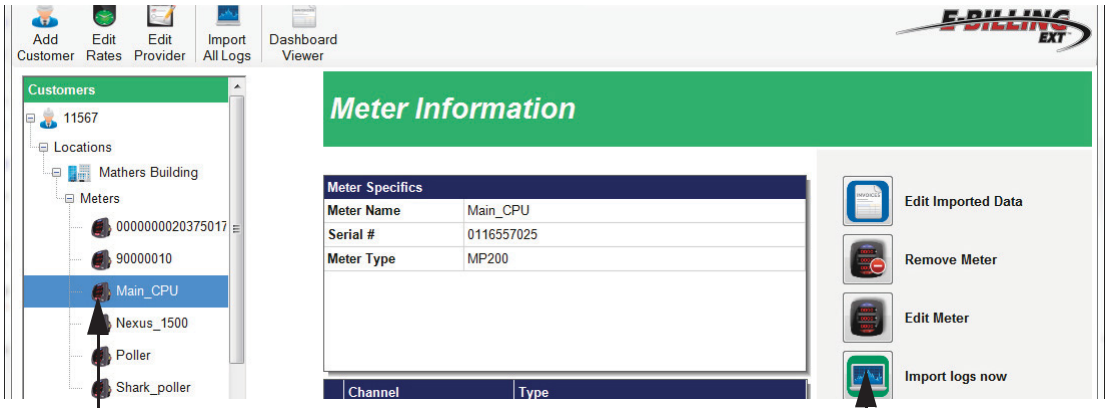
If you close the software before importing is done, the import is aborted, and once the current import is complete, the software fully close down. Until then, the software remains running, even though all the windows are closed.

6.1.3: Import Customer's Locations

This option lets you import the data for all of the meters for a customer. This can speed up the import if you are only interested in importing any new data for one customer. From the E-Billing Settings Editor main screen, click on the customer you want in the list, and then click Tools >Import>Import Customer's Locations.

6.1.4: Import Meter

If there is new data for just one meter, you can import just that by selecting the meter and clicking the Import Logs Now icon. See the partial screen capture below.

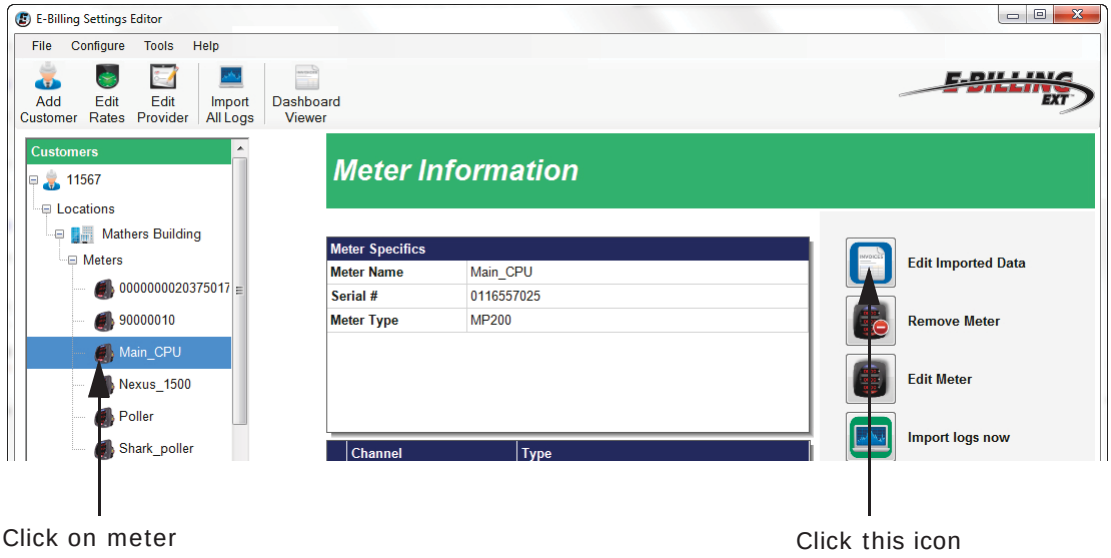


NOTE: If you need to re-import old data, hold down the Ctrl>Shift keys while clicking the Import Logs Now icon: doing this will wipe out data already imported.

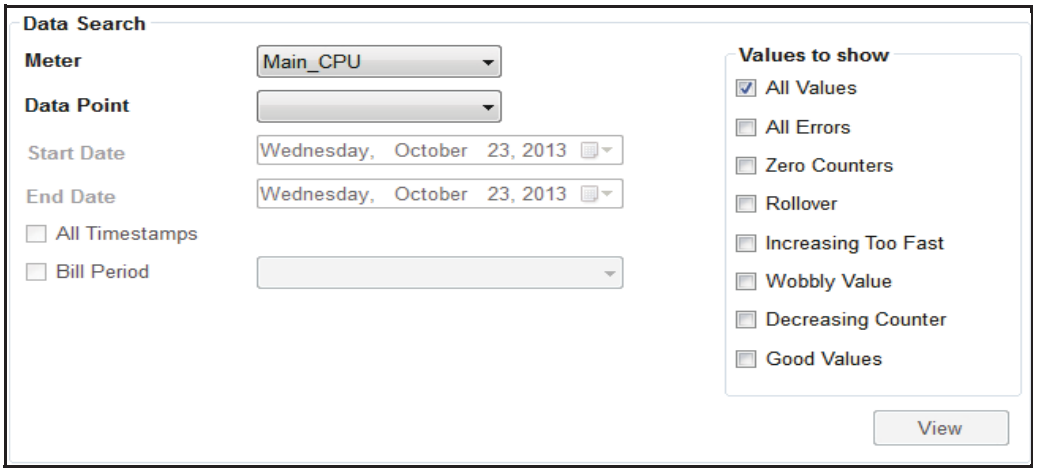
6.1.5: View Meter Data

Follow these steps to view the imported meter data.

1. From the E-Billing Settings Editor main screen, use the Tree menu on the left of the screen to navigate to the meter you want. See the example screen below.



2. Click the Edit Imported Data icon. You will see the Search Bill Data screen, shown below.



3. This screen lets you choose which data point (channel), date range, and type of values you want to view.

   - Meter: from the pull-down menu, select the meter whose data you want to view. Only meters at the currently selected location are shown.

   - Data Point: the channel of the data to view. There are typically three values for each commodity:

     a. <commodity>: this is the value from the meter's logs. These are your base usage values, and are the only values you can change, as all other values are computed from this value; e.g., kWh. If you want to view the "raw" usage data from the meter, select this option.

     b. <commodity>.interpolate.interval: this is the computed interval value of the commodity, typically in 15 minute periods. The values are interpolated from the root commodity values to correct for odd timestamps and missing data. These values cannot be changed, as they are computed from the root commodity; e.g., kWh. If you want to view the computed interval values, select this option.

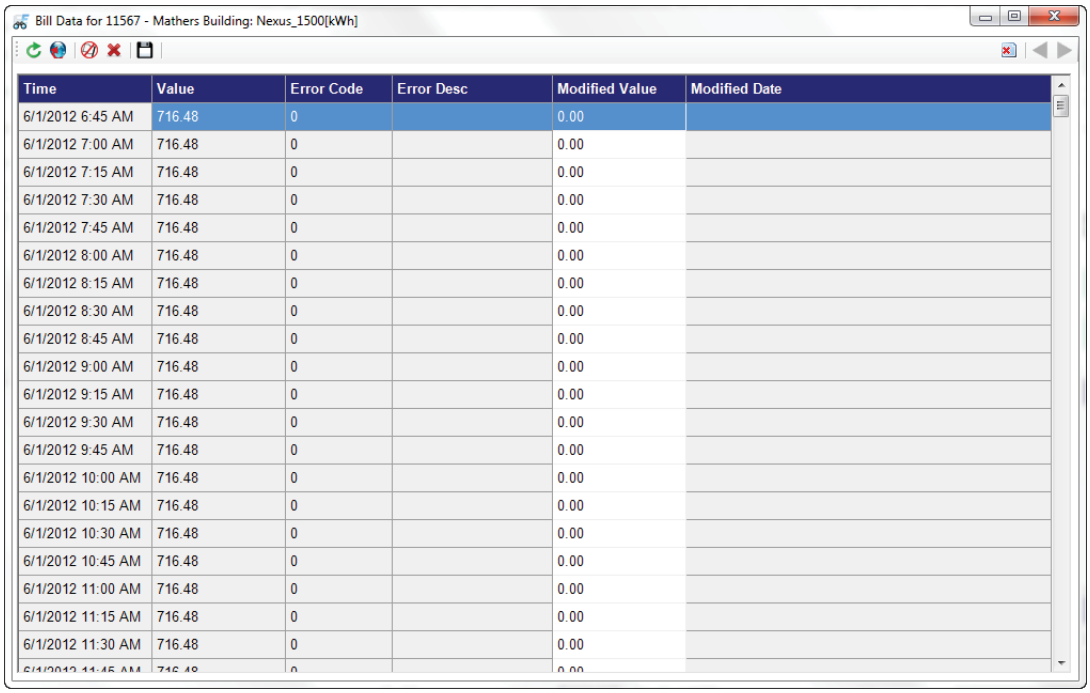
     c. <commodity>.DEMAND: this is the maximum Demand for an hour period, computed from the interpolated interval values for the previous hour. These values cannot be changed, as they are computed from the root com-

modity; e.g., kWh.DEMAND. If you want to view the max Demand, select this option.

- Start Date: the start date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
- End Date: the end date of the data to show. You can only change this field when All Timestamps and Bill Period are unchecked.
- All Timestamps: select this checkbox to automatically select the entire range of stored data to show.
- Bill Period: select this checkbox to see the date range of the billing data in all available billing periods. Click the pull-down menu to display the date ranges. When you select a date range, the beginning and ending date are displayed in the Start Date and End Date fields.
- Values to Show: the checkboxes provide filters, so that only the data you want to see is shown, e.g., only Errors.
    - All Values: show all the values. If this is selected, no other option is valid.
    - Rollover: show values flagged as a rollover. This occurs when the previous value is near the configured rollover point, and the current value is near zero. This is not considered an error.
    - Increasing Too Fast: show values flagged as increasing too fast. Values which are increasing more then 3 times the trend in the previous hour are considered as increasing too fast, and might indicate a problem. This is considered an error, and must be cleared before a bill can be generated.
    - Decreasing Counter: show values flagged as a decreasing counter. Except for the Rollover condition, counters (such as Energy and pulse accumulators, used for Commodities) should never decrease. If they do, this indicates a problem, and must be cleared before a bill can be generated.
    - Good Values: show values which are not flagged with an error condition.

4. Once you've selected the filters you want to use, click View. The data is retrieved from the database and displayed. Values which are flagged as a warning are shown

in Green. Values which are errors and will prevent a bill from being generated are shown in Red. See the example screen below.



Time	Value	Error Code	Error Desc	Modified Value	Modified Date
6/1/2012 6:45 AM	716.48	0		0.00	
6/1/2012 7:00 AM	716.48	0		0.00	
6/1/2012 7:15 AM	716.48	0		0.00	
6/1/2012 7:30 AM	716.48	0		0.00	
6/1/2012 7:45 AM	716.48	0		0.00	
6/1/2012 8:00 AM	716.48	0		0.00	
6/1/2012 8:15 AM	716.48	0		0.00	
6/1/2012 8:30 AM	716.48	0		0.00	
6/1/2012 8:45 AM	716.48	0		0.00	
6/1/2012 9:00 AM	716.48	0		0.00	
6/1/2012 9:15 AM	716.48	0		0.00	
6/1/2012 9:30 AM	716.48	0		0.00	
6/1/2012 9:45 AM	716.48	0		0.00	
6/1/2012 10:00 AM	716.48	0		0.00	
6/1/2012 10:15 AM	716.48	0		0.00	
6/1/2012 10:30 AM	716.48	0		0.00	
6/1/2012 10:45 AM	716.48	0		0.00	
6/1/2012 11:00 AM	716.48	0		0.00	
6/1/2012 11:15 AM	716.48	0		0.00	
6/1/2012 11:30 AM	716.48	0		0.00	

This screen lets you view the values, correct any errors in the data, and export the data for external use.

NOTES:

- This screen is available from both the E-Billing Settings Editor and the E-Billing Dashboard Viewer, but you can only modify the values using the screen from the E-Billing Settings Editor. To view this screen from E-Billing Dashboard Viewer, select the meter whose data you want to view and click Tools > View Bill Data. Only 20,000 points are displayed on the interface at any time. If you are trying to view more than that number of points, click the Next and Previous buttons to scroll the data.

- The preferred method for correcting data errors is described in Section 6.1.7.

•The buttons on the top of the screen and their functions are shown below.

Refresh: click after Update Data icon to display changes

Update Data: click after making changes

Click to clear an Invalid Flag from the currently selected data value

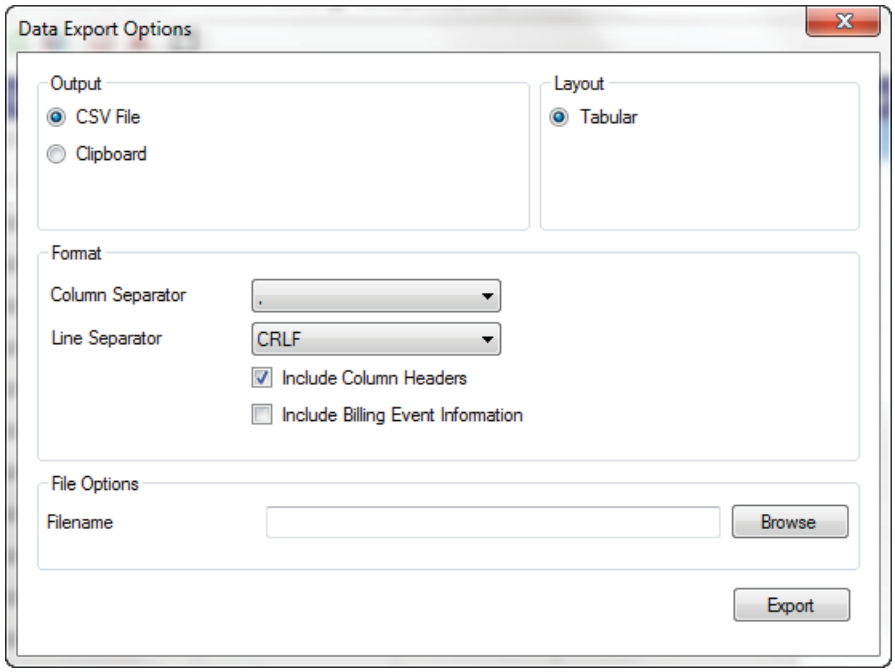
Click to Delete/Undelete the currently selected data value

Click to export data (see Section 6.1.6)

Click to show data values that have been removed - then you can click the Undelete icon and the Update Data icon to restore the value

6.1.6: Export Meter Data

You can export all of the data by clicking the Export Data icon on the toolbar. You will see the screen shown below.



This screen lets you export the data to either the clipboard or a .csv file. Then you can copy the data into another application, such as the Microsoft Excel® application, or use it in your own applications.

NOTE: Export is also available from E-Billing Settings Editor's Bill Data View.

1. Use the options in the Output box to specify where to export the data:

- CSV File: exports the data to a CSV (Comma Separated Value) Text file (though you can select other than commas to separate the exported values). When you select this option, you must enter a Filename in the bottom of the screen.

- Clipboard: exports the data to the clipboard. Be careful when using this option, as the amount of data being exported may be very large. When you select this option, you do not enter a filename.

2. The setting in the Layout box controls the layout of the data being exported. The only option is Tabular, which means the data is exported in a table format: rows are data entries and columns are fields.

3. The settings in the Format box control how the output is formatted.

   - Column Separator: use this setting to select the character used to separate fields in a row.
     - Comma (‘,’) is the most common separator.
     - Tab should be selected if you plan to paste the data into a spreadsheet program, e.g., the Microsoft Excel® application.
     - Space should be selected if needed by your application.

   - Line Separator: use this setting to configure the sequence of characters used to indicate the end of a row. Your options are CRLF and LF. Different operating systems and software applications expect different line endings, but CRLF is the most common.

   - Include Column Headers: click this box to put the name of the field at the top of the column, before the start of the data. You may want to leave this box unchecked when using automated processing, if your application doesn’t know to discard the first line (the column headings).

   - Include Billing Event Information: click this box to export analysis information, such as error code or modified date, along with the regular data. If you leave this box unchecked, only the Timestamp and Value are exported.

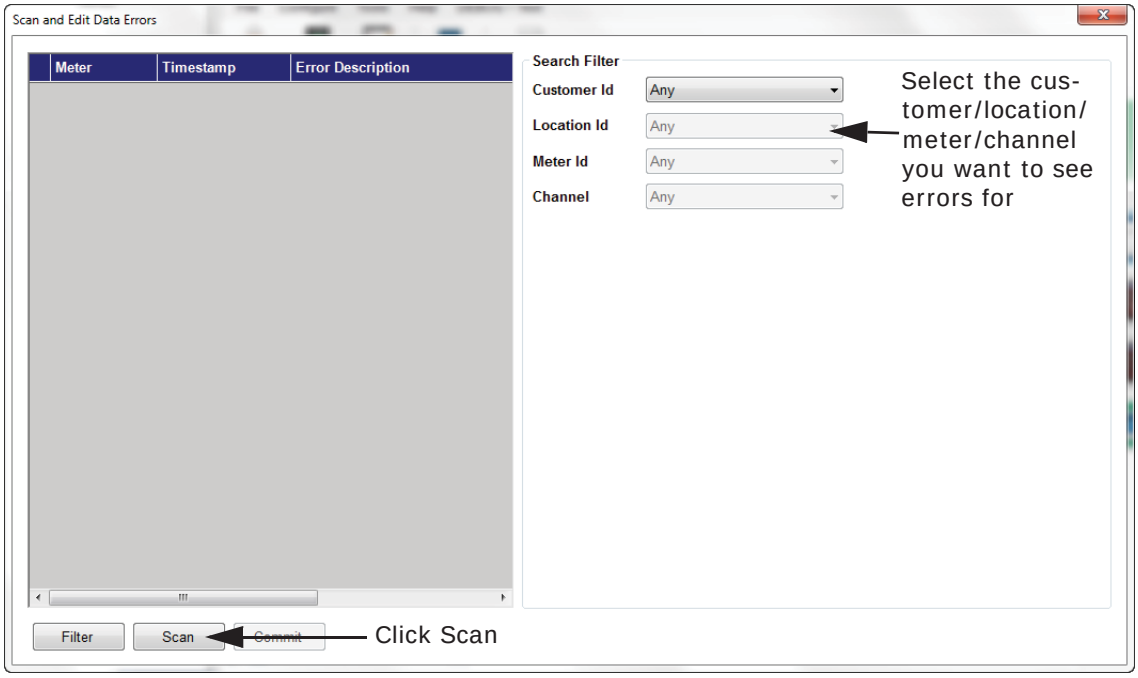
4. File Options: you will see this field if you choose the .csv file Output option. Click Browse to locate the directory for your file and enter a filename.

5. Click Export to export the data. You will see a Confirmation window when the export is complete. Click OK to close the window and the Data Export Options screen.

6.1.7: Correct Data Errors

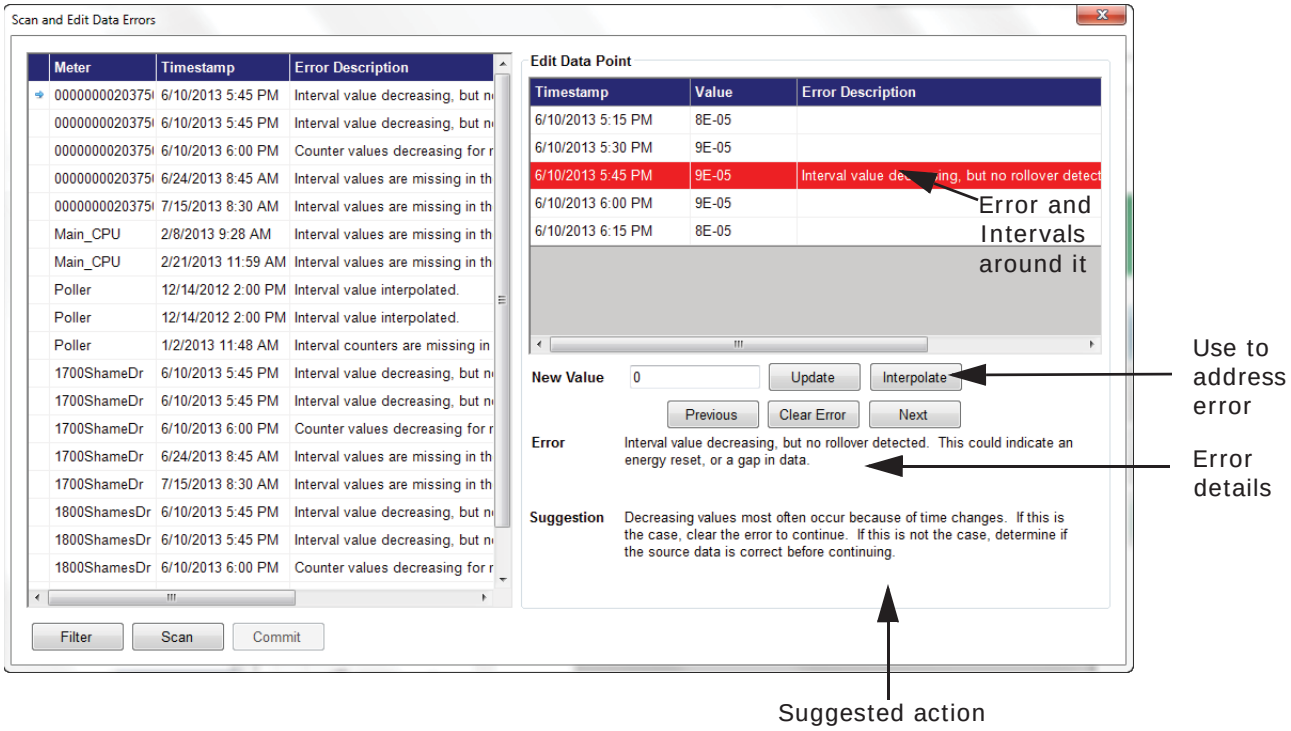
Following is the recommended procedure for correcting data errors, for example, zero values due to problems in communication.

1. From the E-Billing Settings Editor Main screen, click Tools>Edit Data Errors. You will see the screen shown below.



2. You use the fields on the right side of the screen to refine your search for data errors. You can specify customer, location, meter, and/or channel, or select Any which will display data errors for all of the entries in that field; for example, to see data errors for all of the meters at a location, select the Location from the Location ID pull-down menu, and then select Any from the Meter ID pull-down menu.

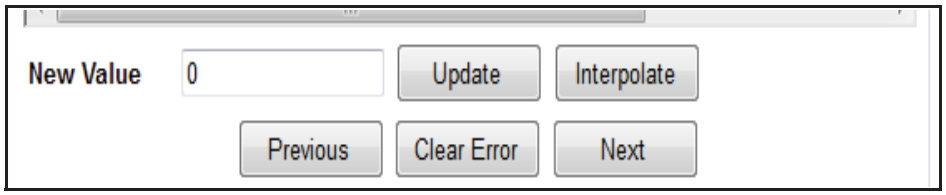
3. Click Scan to cause the software to begin looking for the data errors. When scanning is done, any errors will display on the left side of the screen, along with the meter and timestamp. The fields on the left display the Error Description field, and detailed information regarding the error and ways to handle it are displayed on the right side of the screen. See the example below.



- The top right of the screen displays the timestamp and value of the erroneous data and the timestamps and values around it, to help you diagnose the error and decide what to do about it.

- The bottom right of the screen gives information about the error and the suggested way to handle it.

- The middle right of the screen contains fields you use to handle the error.



4. Use the fields shown above to handle the erroneous data:

   - New Value: if you know what the value should be, enter it in this field. If the value is wrong, but you don't know what it should be, use Interpolate (see information below).

   - Update: after entering a new value, click this button. The next error, if there is one, is displayed. Update uses the new value for the error record. It doesn't clear the error, though, so if the new value is wrong, it will still be an error.

   - Interpolate: if you don't know what the value should be, click this button to have the software enter the new value for you. The software can only do this if there are enough intervals before and after the error for it to compute the value from.

   - Clear Error: if the error is not something that you can correct by entering a new value, e.g., missing data, click this button. This flags the value as valid, and tells the system that you want to use this value to compute reports.

   - Previous: to view the error before this one, click this button.

   - Next: to view the error after this one, click this button.

5. Click the Commit button to save all your changes. The software re-analyzes the data, and presents the results in the Scan and Edit Errors screen. If all the data is good, the screen should show no errors.

6. If you have any more errors to correct, click Filter to re-display the selection fields on the right side of the screen, and then click Scan to view and address the errors. If you do not have any more errors to correct, click X to close the window.

7: Step 7 - Generate Bills

You use the E-Billing EXT™ application's E-Billing Dashboard Viewer to generate and view bills (as well as for viewing usage data in the usage dashboard and generating and viewing Executive Summary Usage Reports, both of which are explained in the next chapter). See the diagram below.

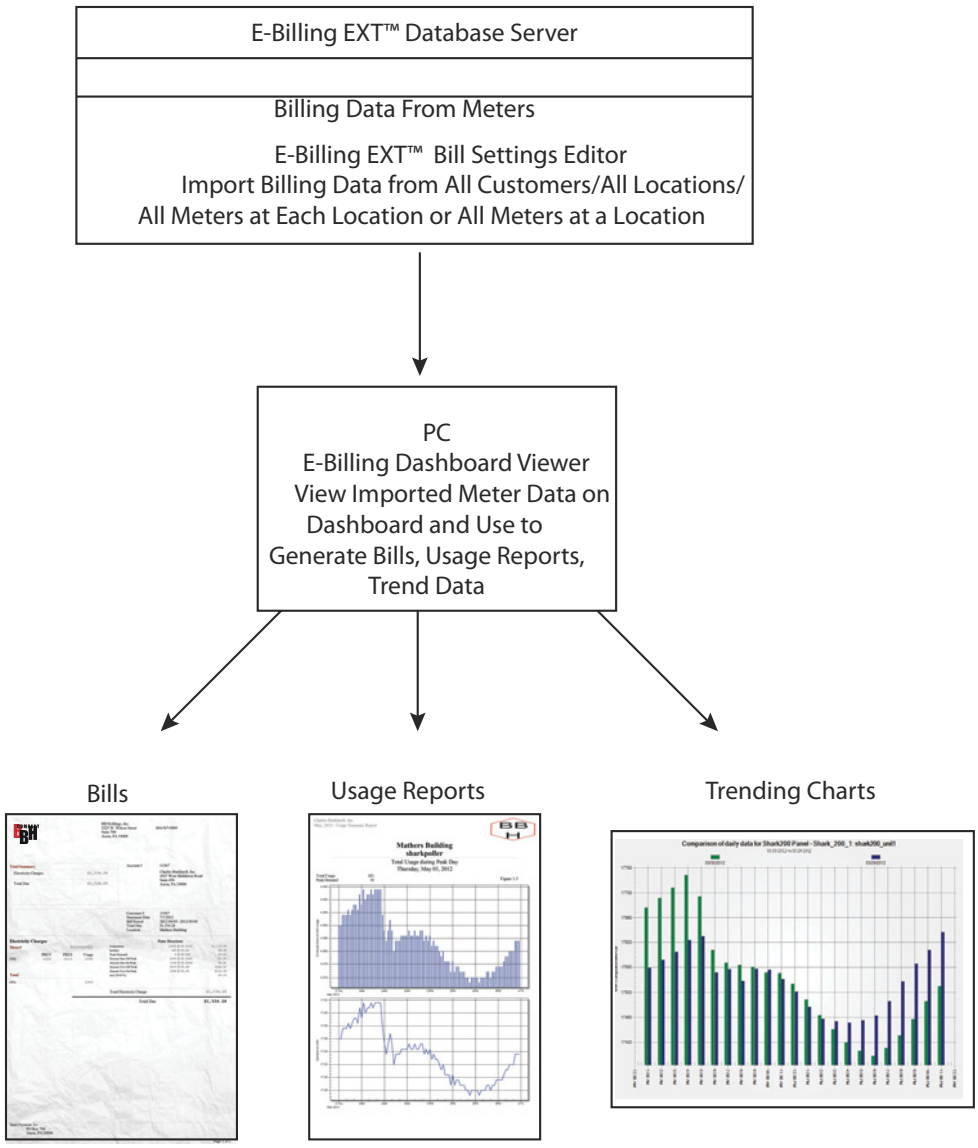


Figure 7.1: Bill Generation through the E-Billing EXT™ Application

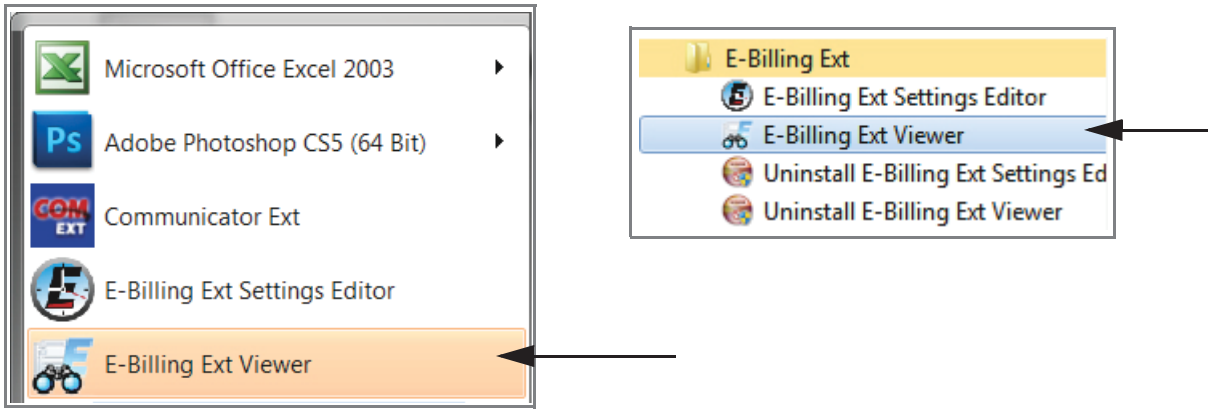
IMPORTANT! In Network mode, bills and reports are automatically generated every twelve hours, for any location for which there is a full months' worth of data. For Local Only mode you need to generate bills and reports manually. You can also manually generate bills and reports for Network mode if you want.

7.1: Generate Bills Manually

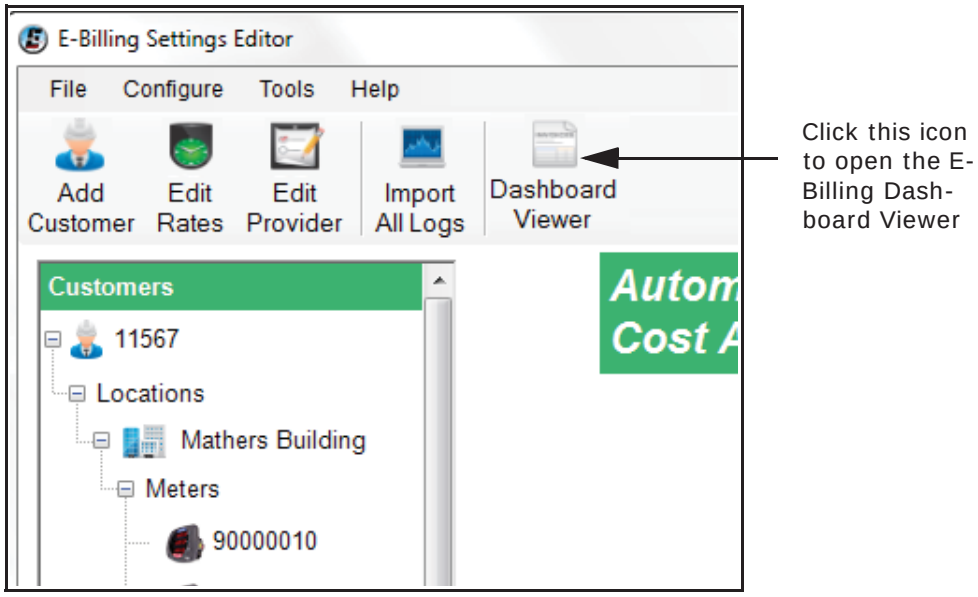
Bills are generated manually from the E-Billing Dashboard Viewer software. When a bill is generated, the software analyzes the usage data for the meters at a location, and applies the configured rate structure to that data.

A bill is always generated for a bill period, which is the date range from the billing date of the previous month, to the billing date of the current month. A bill period need not contain a full month's worth of data: a bill can be manually generated if there is at least two days' worth of data.

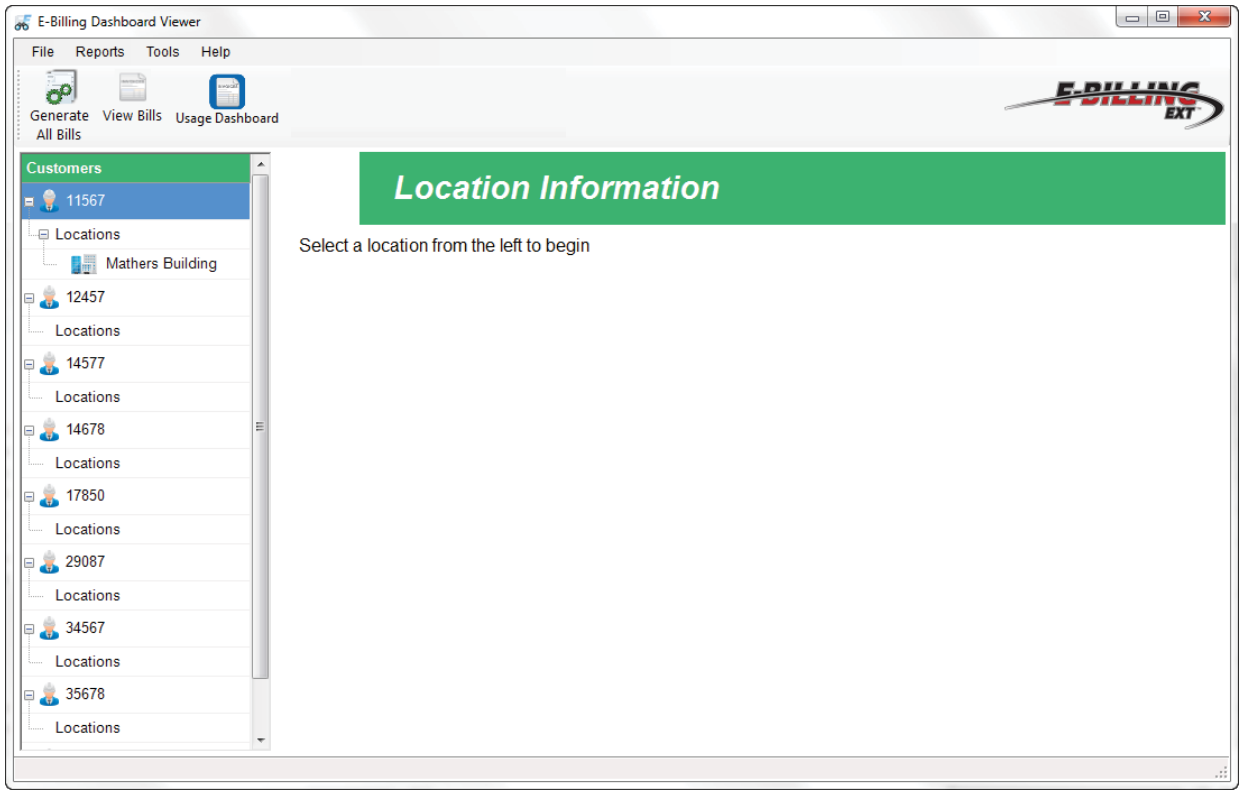
To open the E-Billing Dashboard Viewer software, click E-Billing EXT™ Viewer from the Start menu. See the two examples shown below.



NOTE: You can also open the E-Billing Dashboard Viewer from the E-Billing Settings Editor - just click the Dashboard Viewer icon in the Title bar.



You will see the E-Billing Dashboard Viewer main screen, shown below.



7.1.1. Generate All Bills

When you use this function, the software scans for any bills that haven't been generated yet, and generates them.

1. From the E-Billing Dashboard Viewer main screen, click the Generate All Bills icon.

2. While the software is scanning for bills to generate, the list of periods found so far are displayed. You can stop the scan at any time to generate bills from the list of values scanned so far: to do so, click Cancel.

3. When scanning is done (or after you've clicked Cancel), the list of available periods is displayed. See the screen shown below.

4. Select which periods you want to generate bills for by clicking in the Generate box. By default, all periods which have no errors, and haven't been generated before, are selected for generating bills (their box is checked).

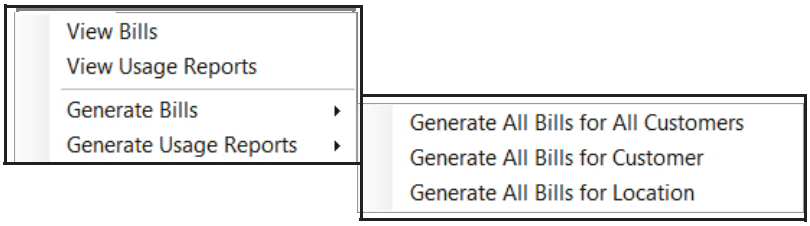
   NOTES:

   - Any period which already has a bill generated for it appears in grey with an unchecked box. You can still select it, if you want to generate another bill for that period, e.g., if the meter's data was changed after the bill was generated. This can happen if you generate a bill before the end of the month.
   - Any period which contains errors, or is missing too much data, appears in red. You cannot generate bills for these periods until you correct the errors (see Section 6.1.7 for instructions).

5. When you've selected all the periods you want to generate bills for, click Generate. While the bill is being generated, the progress is displayed. The Bills to Generate screen closes once the bills have been generated.

7.1.2.: Generate All Bills for Customers/Location

Since the Generate All Bills option can take a long time to complete, the E-Billing EXT™ application gives you two additional options for generating a smaller number of bills. Access these options from the Reports>Generate Bills submenu from the E-Billing Dashboard Viewer main screen's Title bar. The submenu is shown below.



- Click Generate All Bills for Customer to generate all available bills for all locations for the selected customer (the customer currently displayed on the screen).
- Click Generate All Bills for Location to generate all available bills for the selected location (the location currently displayed on the screen).

You will see the Bills to Generate screen shown on the previous page. The instructions are the same as those shown in Section 7.1.1, steps 4 and 5.

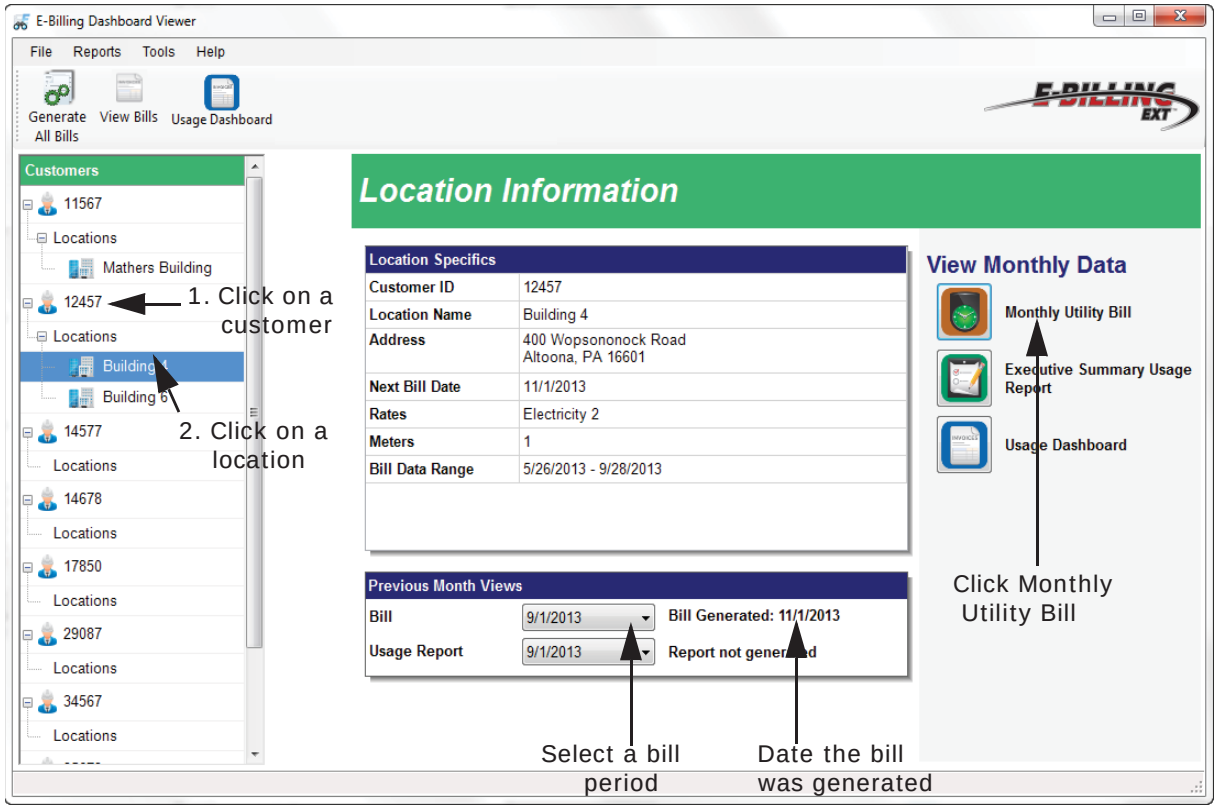
NOTE: The Generate All Bills for All Customers option is the same as the Generate All Bills option explained in Section 7.1.1.

7.2: Individual Bills

Bills can be generated individually for a specific location and bill period.

1. Select the location from the Location Tree on the left of the main screen, then select the Bill Period to view by selecting it in the list of Available Bill Data. If the bill has already been generated for the period, the bill generation date will be shown next to the billing period. See the screen shown below.

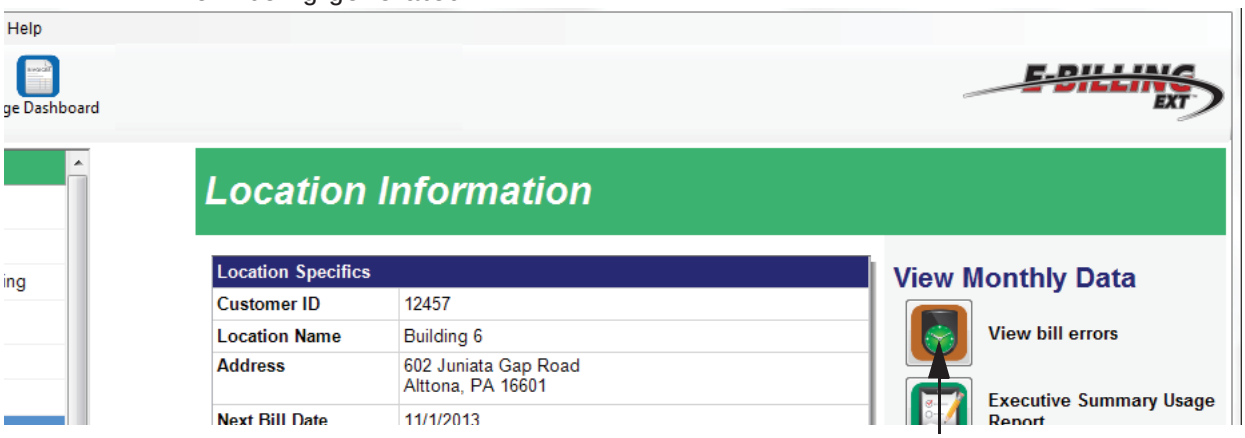
   NOTE: It may take a while for the data to be displayed if there are multiple meters at the location, or if there is a lot of data to search. Please be patient.



2. Click the Monthly Utility Bill icon. The software checks to see if the period you selected contains valid data.

   - If the Period contains errors, the View Errors icon appears (see the partial screen below). Click this icon to see a list all of the errors that prevent the bill

from being generated.



View Bill Errors icon

- Click on a channel to view the errors in the meter data records. Follow the instructions in Section 6.1.7 to correct errors.

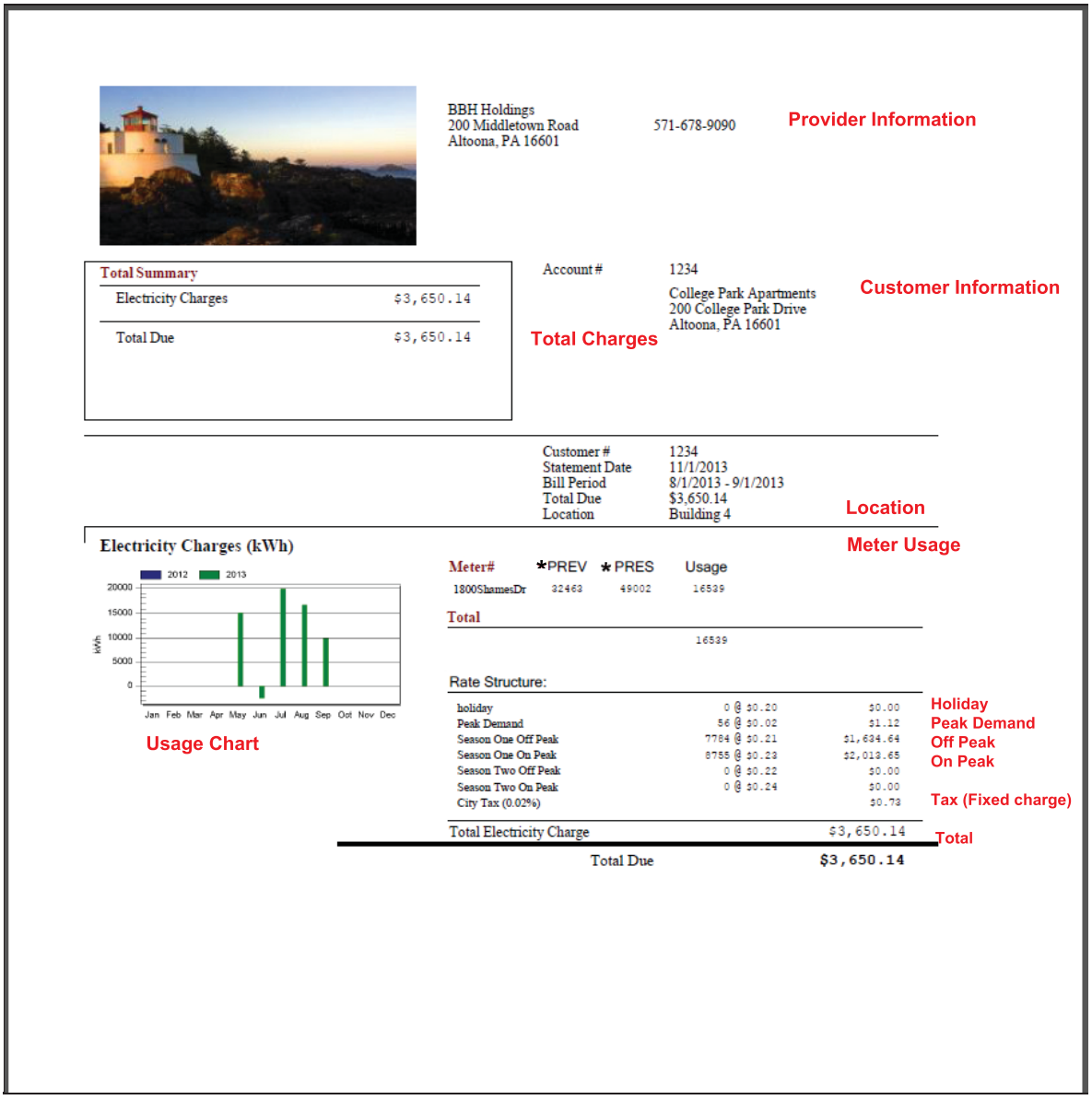
  NOTES:

  - Errors can only be corrected from the E-Billing Settings Editor.
  - Typically, the errors in .DEMAND and .INTERPOLATE.INTERVAL are caused by the problems in the Root Commodity value. Correct that value before checking the others.
  - If the Period contains no data, the Monthly Utility Bill icon is greyed out and displays the message “Unable to generate monthly bill: too many records missing from period.” This happens if you have less then 2 days’ worth of data.

3. While the Bill is being generated, the progress is displayed in a screen.

   NOTE: You can generate multiple bills for a single bill period, so if you click the Generate Monthly Bill for Selected Bill Period icon twice, you will generate two bills.

4. Once the bill is generated, it opens in your screen. See the example bill below.



BBH Holdings
200 Middletown Road
Altoona, PA 16601
571-678-9090

Provider Information

Total Summary

Electricity Charges	$3,650.14
Total Due	$3,650.14

Total Charges

Account # 1234

College Park Apartments
200 College Park Drive
Altoona, PA 16601

Customer Information

Customer #	1234
Statement Date	11/1/2013
Bill Period	8/1/2013 - 9/1/2013
Total Due	$3,650.14
Location	Building 4

Location

Electricity Charges (kWh)

Meter Usage

Usage Chart

Meter#	*PREV	*PRES	Usage
1800ShamesDr	32463	49002	16539
Total			16539

Rate Structure:

holiday	0 @ $0.20	$0.00
Peak Demand	56 @ $0.02	$1.12
Season One Off Peak	7784 @ $0.21	$1,634.64
Season One On Peak	8755 @ $0.23	$2,013.65
Season Two Off Peak	0 @ $0.22	$0.00
Season Two On Peak	0 @ $0.24	$0.00
City Tax (0.02%)		$0.73
Total Electricity Charge		$3,650.14

Holiday
Peak Demand
Off Peak
On Peak

Tax (Fixed charge)

Total

Total Due $3,650.14

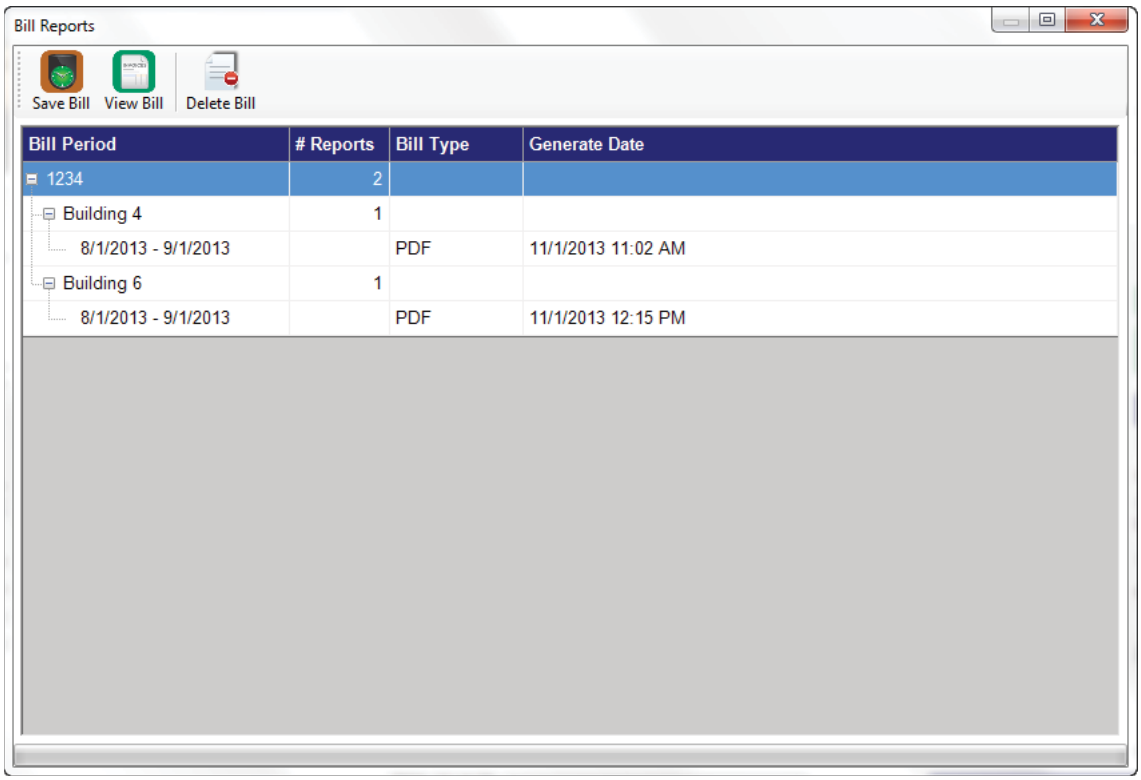
*** If this bill was generated from Interval Energy data, there will be no PREV(ious) or PRES(ent) usage values.**

7.3: View Bills

You can view generated bills either by clicking the View Bills icon in the E-Billing Dashboard Viewer's main screen, or by clicking Reports>View Bills from the screen's Title bar.

NOTE: The viewed bill is just a temporary file that has been downloaded from the E-Billing EXT™ Database server, where the bills are stored. Any changes you make to it are not saved on the Database server.

1. The list of all generated bills displays. See the example screen below.



2. Click on the + sign next to the customer to display the location; then click on the + sign next to the location to display the bills for the location.

3. Click on the bill you want to view and click the View Bill icon. A PDF of the bill opens (see the example bill on the previous page).

4. You have the following options:

   - To save a copy of the bill on your computer, click the Save Bill icon. (Bills are stored on the database server. To get a local copy, you need to save the bill on

your computer.) A screen opens which lets you choose the location of the saved bill and give it a filename.

- To delete the bill, click the Delete Bill icon. A Confirmation window opens. Click Yes to delete the bill; click No to keep the bill.

  WARNING! Be careful when deleting bills. Once you delete a bill, it is removed from the server. (You can re-generate the bill later.)

  You can delete multiple bills by selecting a range of bills, and clicking Delete. Make sure that you've selected **only** the bills you want to delete.

  WARNING! Be careful when deleting across multiple locations, as it is easy to select more bills than you intend, or miss some you want to delete.

  NOTE: Removing a customer or location from the system doesn't delete the bills that have already been generated for them. If you want to get rid of the bills, you must delete them manually.

8: Step 8 - Usage Dashboard and Reports

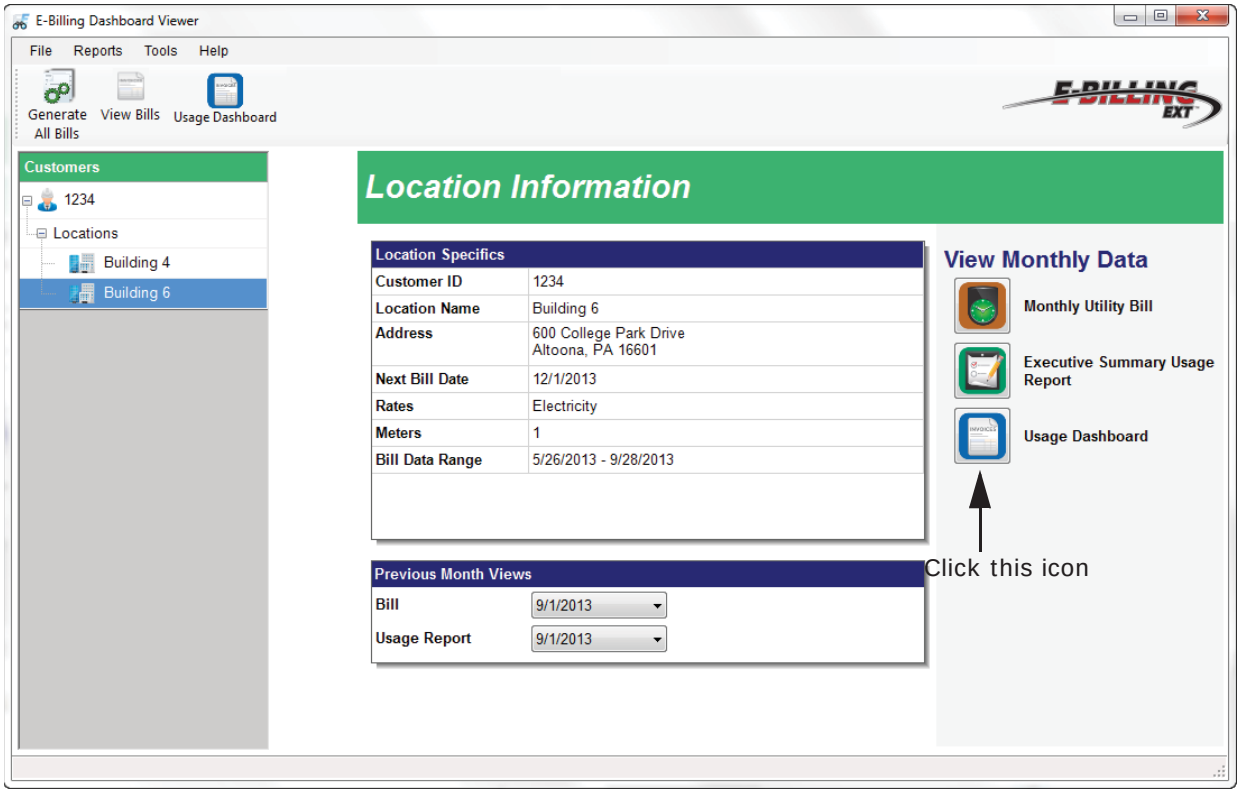
The E-Billing EXT™ application gives you a usage dashboard and usage reports from the imported meter data. Both the dashboard and the lets you perform detailed usage analysis and planning.

8.1: Usage Dashboard

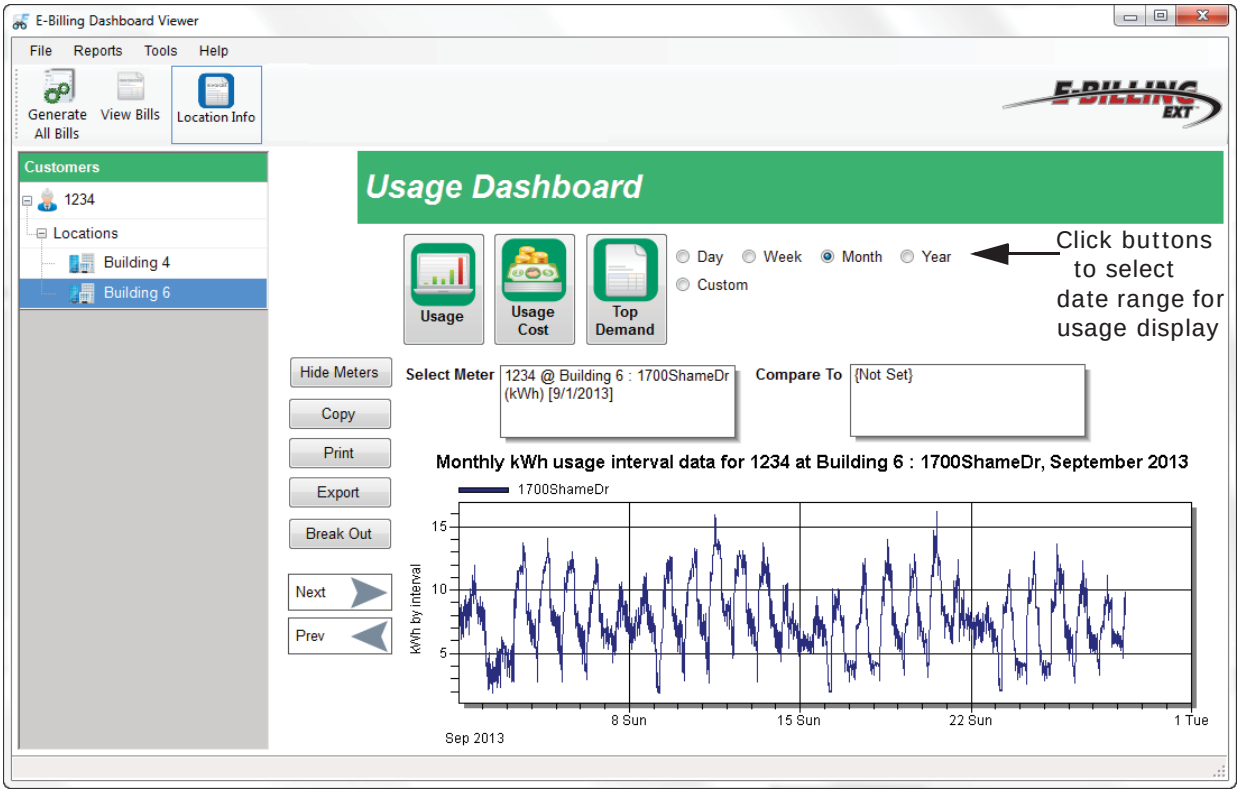
One of the important features of the E-Billing EXT™ application is the usage dashboard. It supports an Enterprise-wide billing solution by allowing you to easily view Energy and other commodity usage data in a number of formats:

- View Usage by Day, Week, Month, Year or a Customized Date Range
- Compare Usage Between Meters
- View Costs
- View Top Demand by Day, Week, Month, Year, or a Customized Date Range

1. To view the Energy Dashboard, click on a Location from the E-Billing Dashboard Viewer's main screen and then click the Usage Dashboard icon.



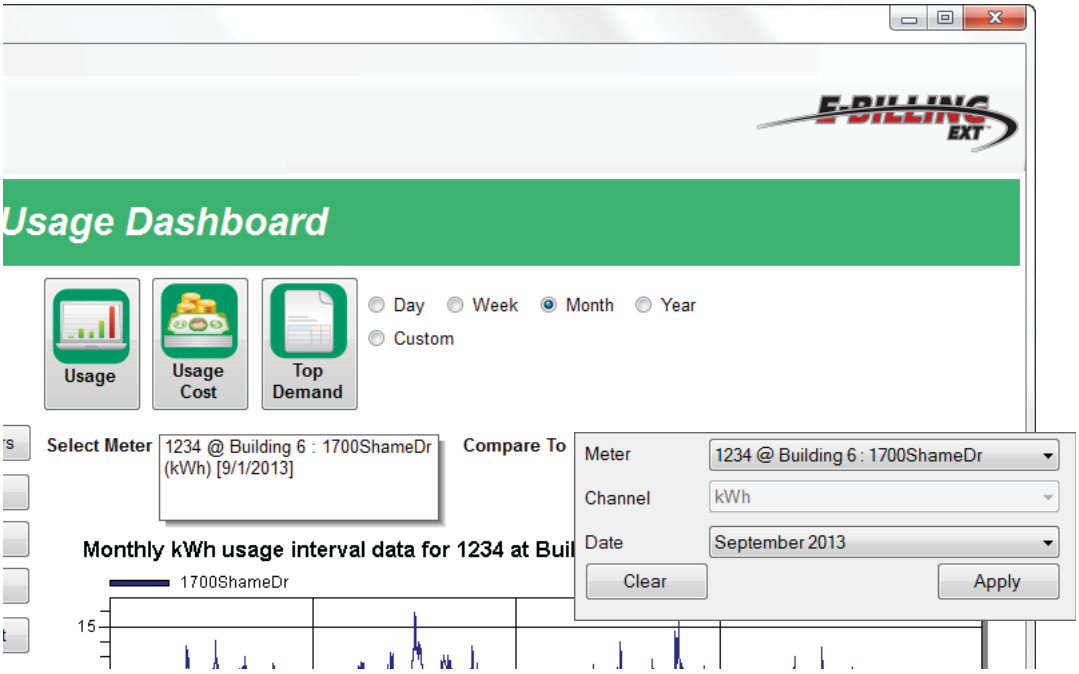
2. The screen changes as shown below.



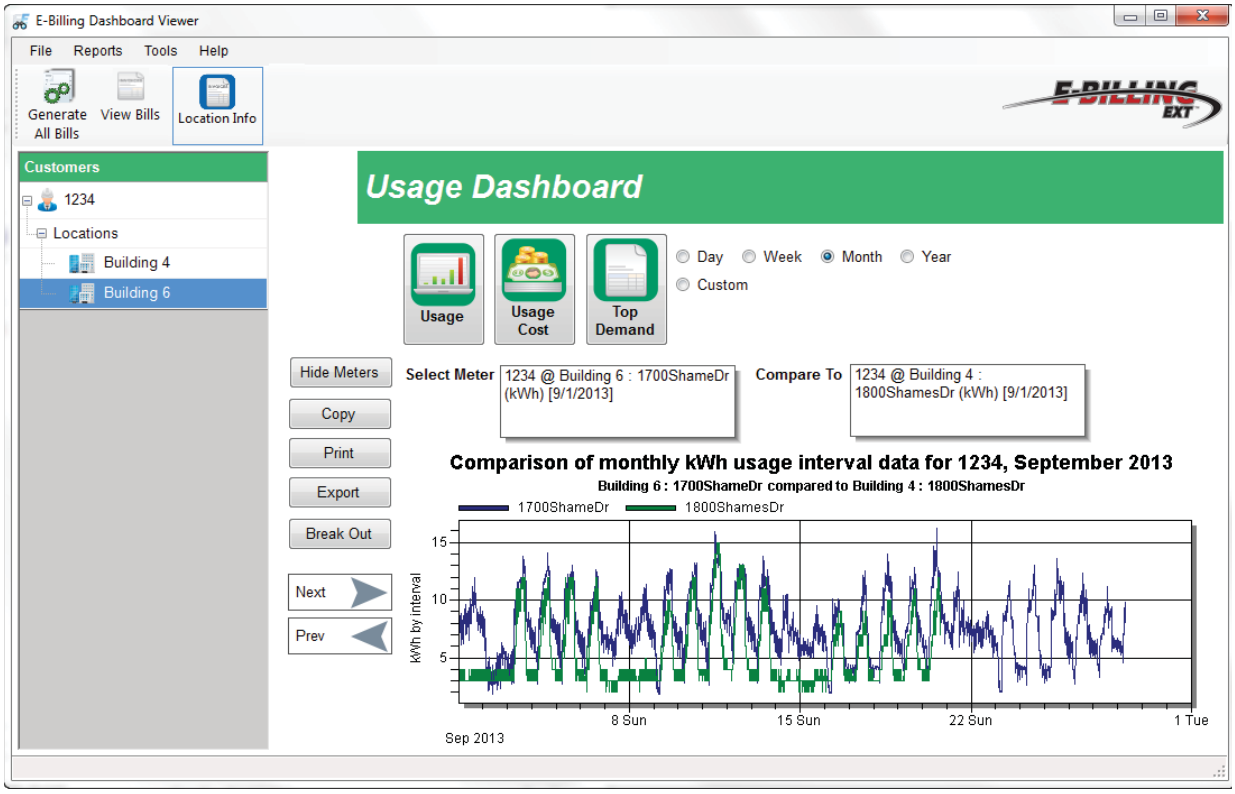
- The monthly usage is shown for the latest month's bill. To see earlier months, use the Prev button; to return to later months use the Next button.

- You can select Day, Week, Year, or Custom (to enter a custom date range), by clicking the radio buttons to the right of the Top Demand icon. These options let you view usage data for any period you would like (the default selection is month).

3. You can select another meter to compare usage: click in the box next to Compare To. You will see the entry fields shown below.

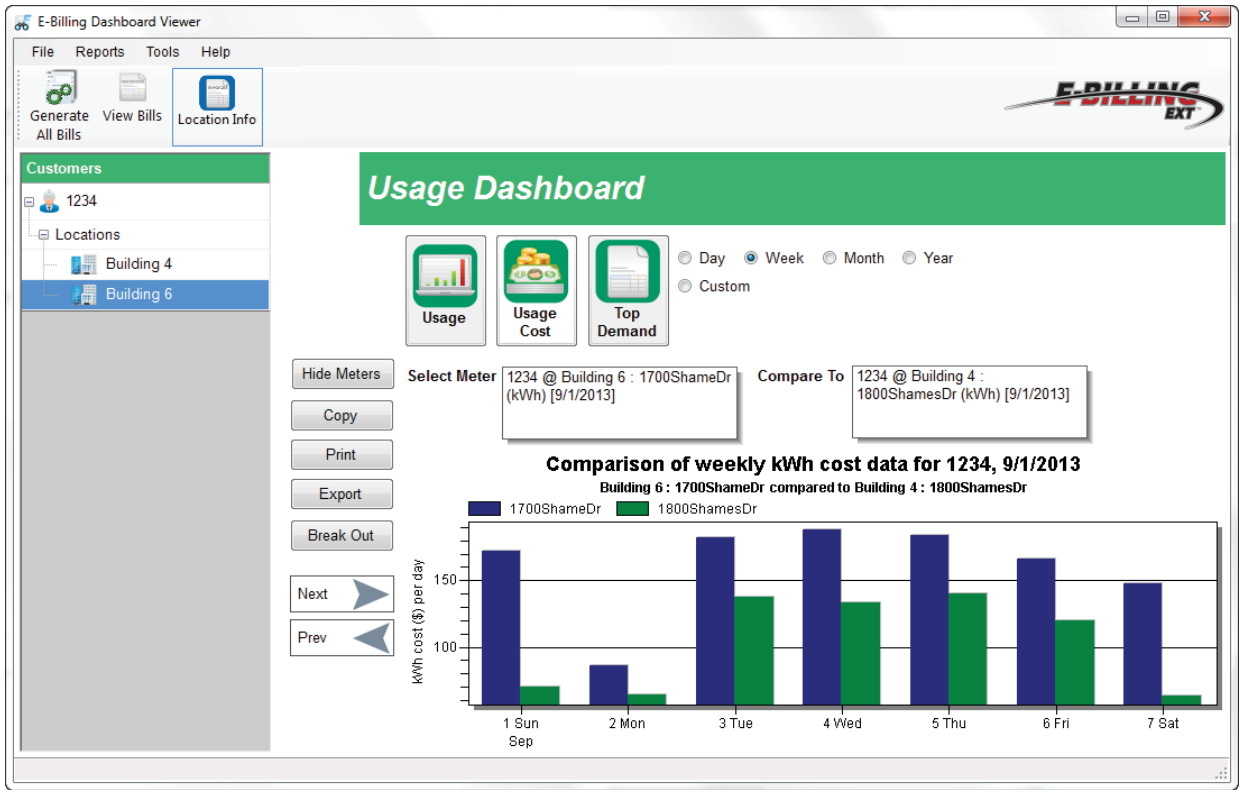


4. Select the meter, channel and date from the pull-down menus and click Apply. The screen will redisplay, showing both meters' data.



To remove the second meter's data from the display, click in the box again and click Clear in the meter selection window.

5. To see usage cost data, click the Usage Cost icon. The example below shows usage cost for the two meters per week. The display default's to the first week of the current month - use the Prev/Next buttons to navigate to other weeks' usage cost data.



6. To see top demand usage, click the Top Demand icon. The example below shows top demand for the two meters per day. The display defaults to the first day of the month - use the Prev/Next buttons to navigate to other days' data.

7. The buttons on the left side of the usage dashboard let you perform the following tasks:

   - Click Hide Meters to close the meter boxes and make the chart larger. Click Meters to restore the meter boxes.

   - Click Copy to copy the data to the clipboard. You can then paste it into another application, e.g., a spreadsheet.

- Click Print to print the data.
- Export the data: click Export; then import the data into another application, e.g., a spreadsheet.
- Click Break Out to open the data in a separate window.

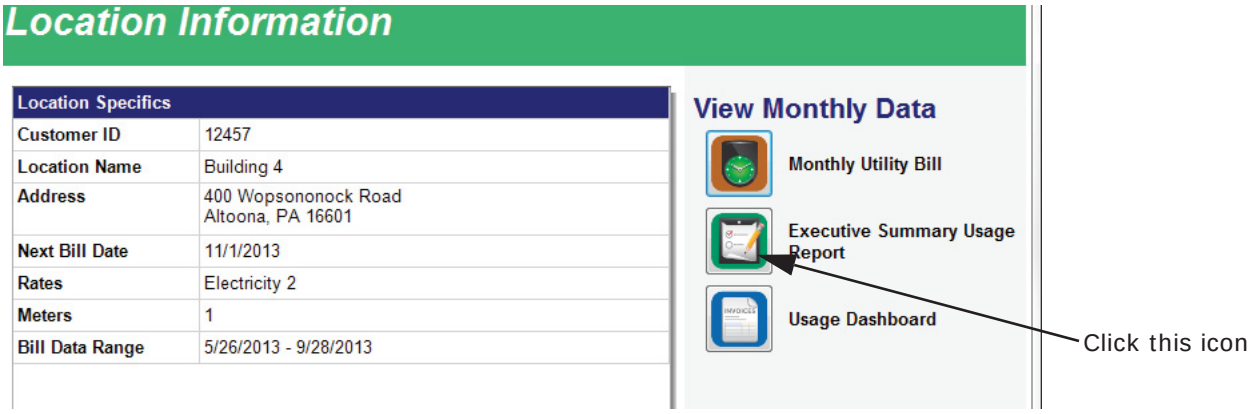
8. To exit the usage dashboard, click the Location Info icon.

8.2: Usage Reports

There are two kinds of reports available from the E-Billing EXT application - the Executive Summary Usage Report, which is a customized report, containing the location and data you specify, and the standard usage report for all customer locations, containing extensive, detailed usage information. Both types of reports contain useful information for usage analysis and planning.

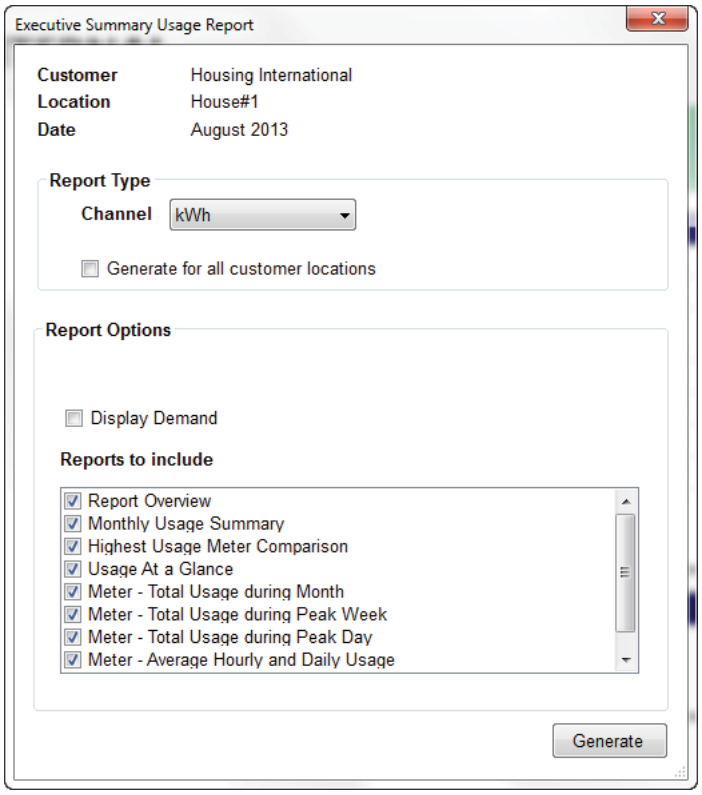
8.2.1: Executive Summary Usage Report

1. From the E-Billing Dashboard Viewer's Location Information screen (see screen example on the bottom of page 8-1), click the Executive Summary Usage Report icon on the right side of the screen.



2. You will see the window shown below. Use it to select the data you want to see in your report. This feature lets you generate a customized report with only the data

you want. For example, you can choose to view the highest usage per meter, or the total usage per meter during the Peak Day.



3. Select the channel from the pull-down menu.

4. Note that the location you are currently viewing is displayed at the top of the screen. That is the only location whose data will be shown unless you select Generate for all customer locations by clicking in its checkbox.

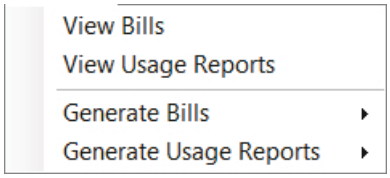
5. If you want to see demand in your report, select Display Demand by clicking in its checkbox.

6. Click the checkboxes of the data you want included in the report. By default, all of the data is selected. Click on a box to uncheck it if you don't want that data in your report.

7. Click Generate. You will see a message while the report is being generated and then it will display on the screen. The report will be similar to the example report shown on pages 8-11 - 8-22, except that it will only contain the locations and data you selected.

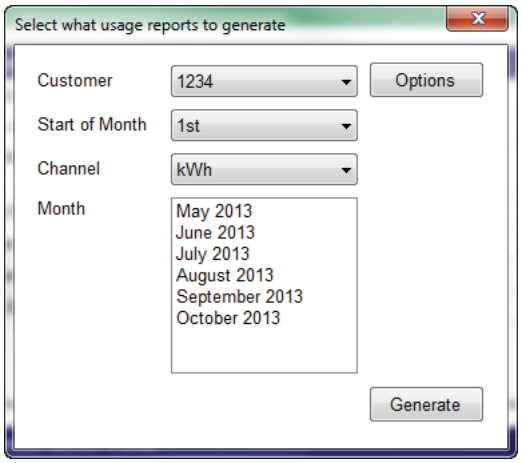
8.2.2: Generate Usage Reports

Click Reports in the E-Billing Dashboard Viewer main screen's Title bar. You will see the submenu shown below.



The View Bills and Generate Bills options have already been explained in Chapter 7. There are two additional Report options - Generate Usage Reports and View Usage Reports.

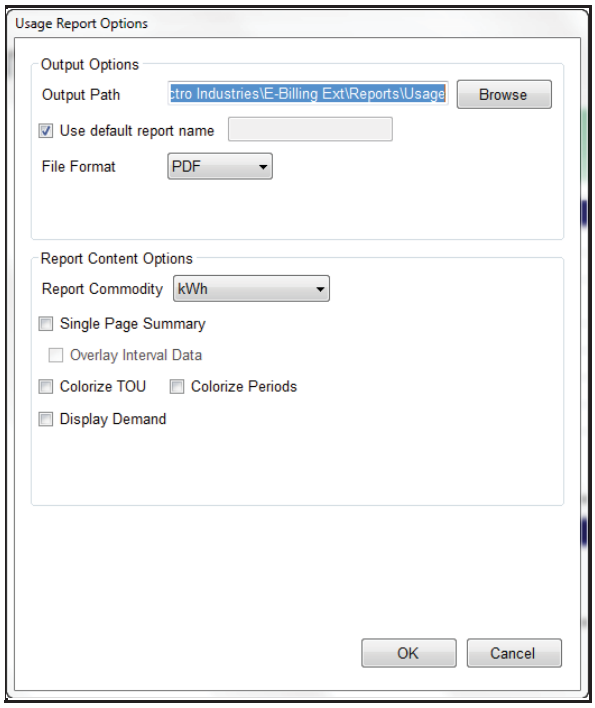
1. Click Reports>Generate Usage Reports>Generate Customer Report. You will see the screen shown below.



2. Select the customer, start date for the month, and channel. The Month box fills with the available months for the customer (the months which contain usage data).

3. Click the month(s) you want to create the usage report for.

4. Click Options. You will see the screen shown below.



5. Configure the following settings:

- The default path is displayed in the Output Path field. Click the Browse button if you want to choose another output path for the file. This is where the report will be saved.

- The Use Default Report Name checkbox is already selected. The default report name is the customer number, commodity, and date of the usage, e.g., 11567_kWh_2013-03 for a report of kWh usage data for March 2013 for customer number 11567. If you want to use a different name for the usage report, un-check the box and enter a name in the blank field next to it.

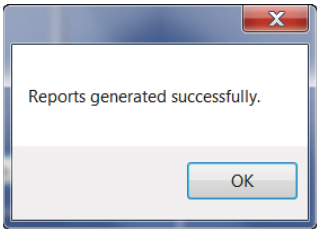
- File format: your format choices are PDF (Adobe PDF document), RTF (rich text format), or HTML (for viewing over the web).

- Report Commodity: select the commodity you want to use from the pull-down menu. Usage reports are only generated for a single commodity at a time.

- Click Single Page Summary if you want to have the month, week, and day usages on the same page.

- If you select Single Page Summary, you can also select Overlay Interval Data. Click this option if you want to have trend data or Demand data (if you select the display Demand option) on the same graph as the usage bars.
- You can select to colorize either TOU or periods.
- Display Demand: labels the Interval usage report as Demand.

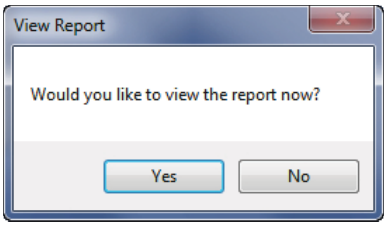
6. Click OK. The screen closes and you see the previous screen. Click Generate to process the report. You see a progress message while the report is being generated. When the process is complete, you see the following message window.



7. Click the OK button to close the message window. Another window opens asking if you want to view your report. See the next section.

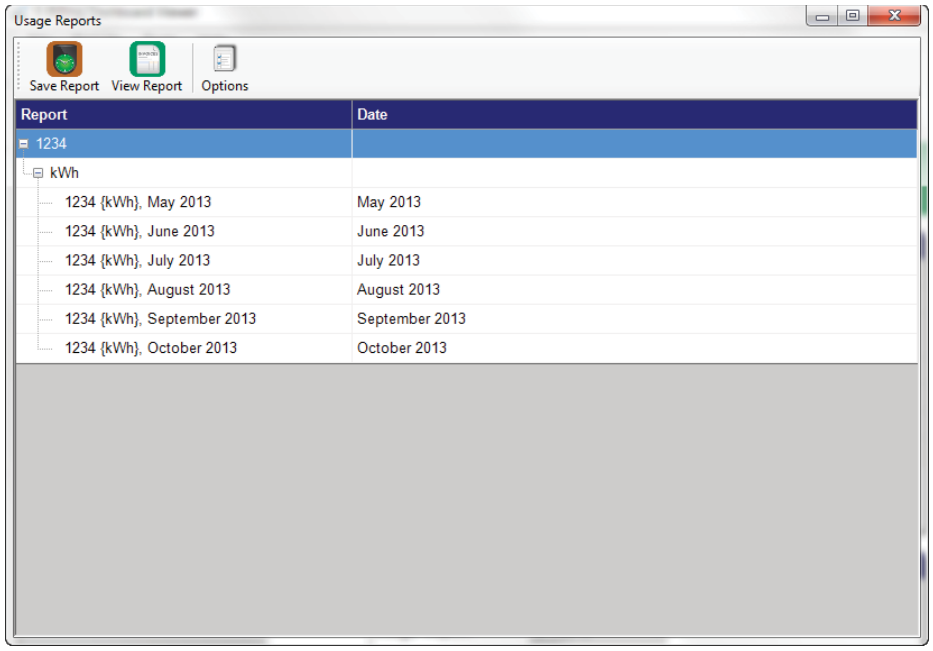
8.2.3: View Usage Reports

When you generate a Usage report you have the option to view it right away.



Click Yes to open the report. See the sample reports beginning on page 8-11.

1. To view Usage reports at any time, click Reports>View Usage Reports. See the example screen shown below.



2. This screen lets you view all of the months with usage data for customer locations. (Click on the + signs next to customer, location, and commodity to see the list of months.) Double-click on a month to view its usage report (or click on the month and click the View Report icon). See the sample reports beginning on page 8-11.

   If the report hasn't been generated yet for the month, it is generated when you select it.

3. You can also:

   - Click the Options icon to generate another usage report, e.g., if you want to use a different format for the report. You will see the Output Options screen shown in Section 8.2.1, step 4.

   - Click the Save Report icon to open a window that lets you choose a filename and a save location for a copy of the report.

NOTE: The following Usage report is an example, only.

College Park Apartments
September, 2013 - Usage Summary Report

Usage Summary Report for College Park Apartments – September 2013

This report provides a summary of the kWh usage for College Park Apartments from Sunday, September 01, 2013 to Monday, September 30, 2013. This report was generated on Thursday, November 07, 2013.

Meter Report

Each meter report contains 5 sub-reports:

1. Month Usage
   Summarizes the usage of the meter over the course of September 2013, from 9/1/2013 12:00:00 AM to 9/30/2013 11:59:00 PM. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values over the period of the report.
   b. Peak Usage – The peak 15 minute interval value over the period of the report.
   c. Month Usage – A graph of the summed usage of each day during the period of the report.
   d. Month Trend – A trend graph of the 15 minute interval values during the period of the report.
2. Peak Week Usage
   Summarizes the usage of the meter over the course of the peak week during September 2013. The peak week is defined as the week containing the peak day. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 4 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values over the period of the peak week.
   b. Peak Usage – The peak 15 minute interval value over the period of the peak week.
   c. Usage over the Week – A graph of the summed usage of each day during the peak week.
   d. Trend over the Week – A trend graph of the 15 minute interval values during the peak week.
3. Peak Day Usage
   Summarizes the usage of the meter over the course of the peak day during September 2013. The peak day is defined as the day which has the highest total usage. All values presented are the computed 15 minute interval values of the recorded commodity (kWh), summed over the specified interval. 3 values are presented:
   a. Total Usage – The sum of all the 15 minute interval values during the peak day.
   b. Peak Usage – The peak 15 minute interval value during the peak day.
   c. Usage over the Day – A graph of the 15 minute interval values during the peak day.
4. Average Hourly and Daily Usage
   Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.
5. Comparison to previous Month and Year
   Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Example Usage Report, First Page

College Park Apartments
September, 2013 - Usage Summary Report

Monthly Usage Summary

Customer College Park Apartments
Month Date 9/1/2013 to 9/30/2013
Commodity kWh

Figure	Meter Location	Meter Name	Meter Type	Meter Serial	Total Usage	Peak Usage	Peak Demand
1	Building 4	1800ShamesDr	Shark 200	0123995130	9891*	15	60
2	Building 6	1700ShameDr	Shark 200	0123320617	20354*	16	65

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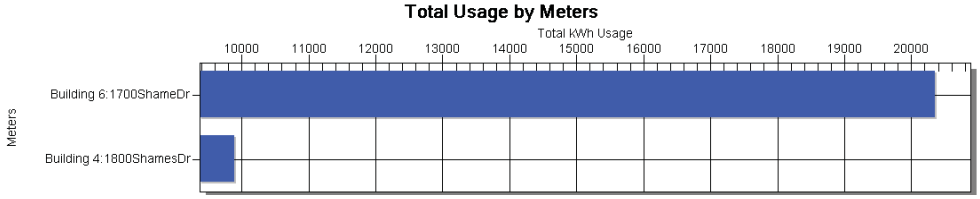
Monthly Summary, Showing Total and Peak Usage For Each Meter at Each Location of the Customer

College Park Apartments
September, 2013 - Usage Summary Report

Highest Usage Meter Comparison

Customer	College Park Apartments
Commodity	kWh
Highest Usage Meter	Building 6:1700ShameDr @ 20354
Lowest Usage Meter	Building 4:1800ShamesDr @ 9891

Total Usage by Meters



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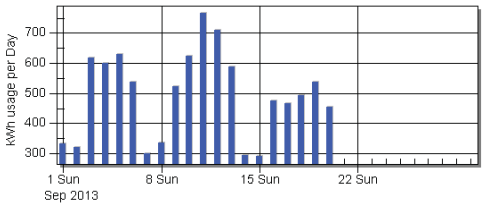
College Park Apartments
September, 2013 - Usage Summary Report

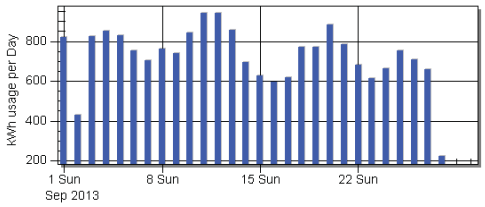
Monthly Usage at a Glance

Customer	College Park Apartments
Month Date	9/1/2013 to 9/30/2013
Commodity	kWh

Building 4 : 1800ShamesDr **1**



Building 6 : 1700ShameDr **2**



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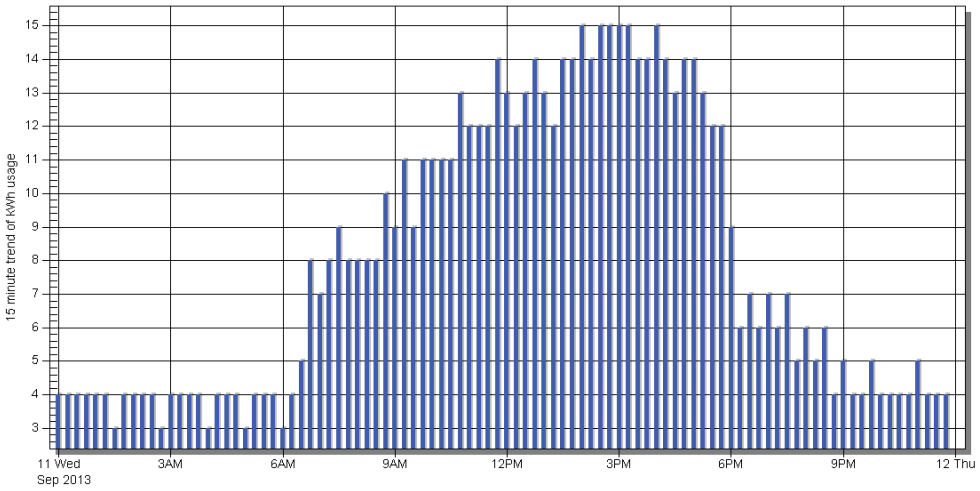
College Park Apartments
September, 2013 - Usage Summary Report

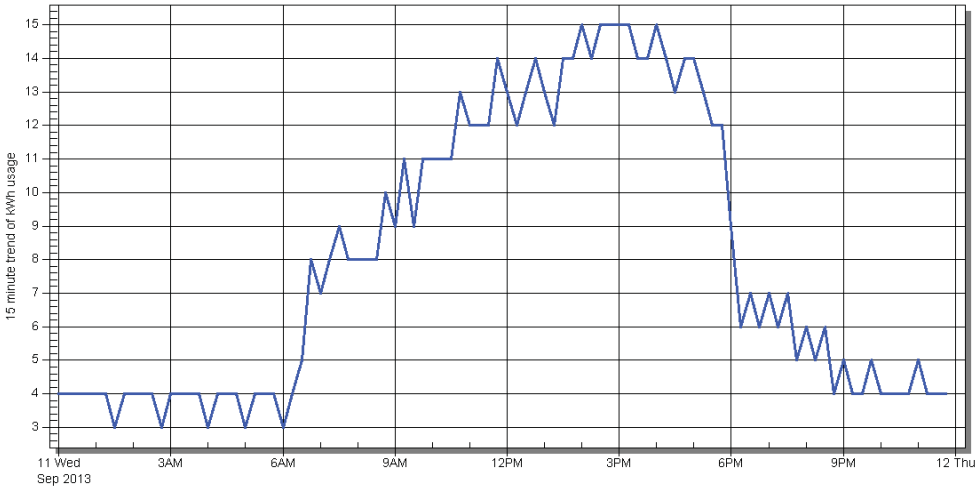
Building 4 : 1800ShamesDr

Total Usage during Peak Day
Wednesday, September 11, 2013

Total Usage	768
Peak Usage	15

Figure 1.3





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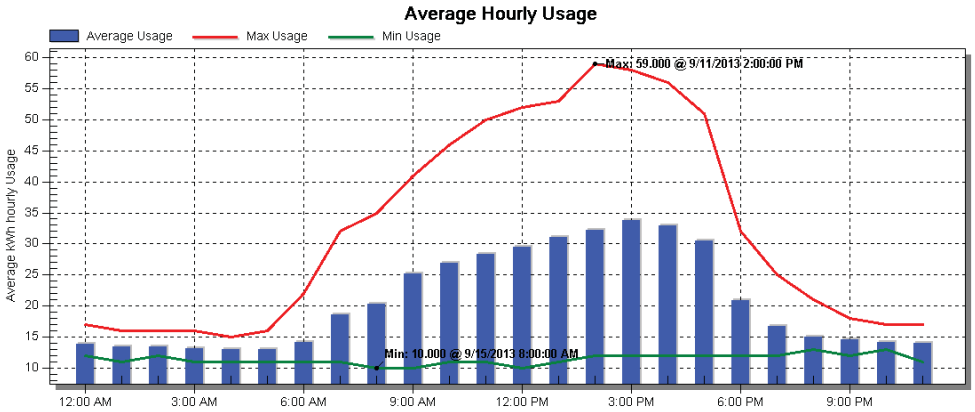
College Park Apartments
September, 2013 - Usage Summary Report

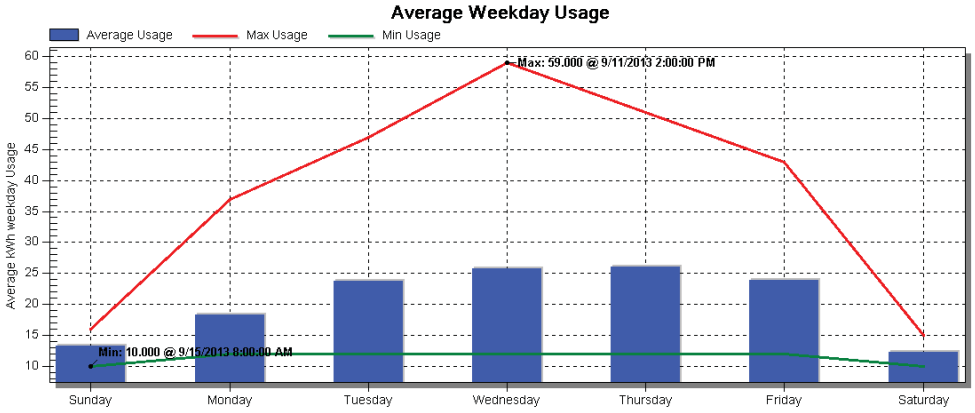
Building 4 : 1800ShamesDr

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 1.4





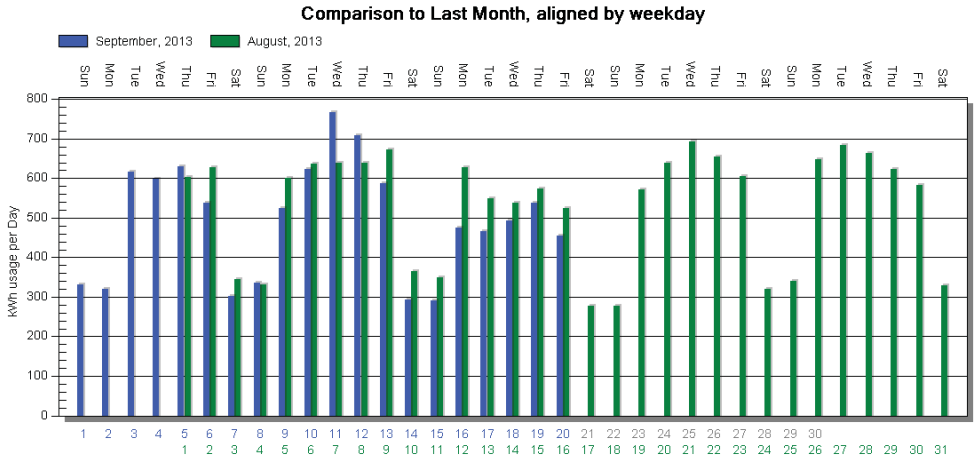
College Park Apartments
September, 2013 - Usage Summary Report

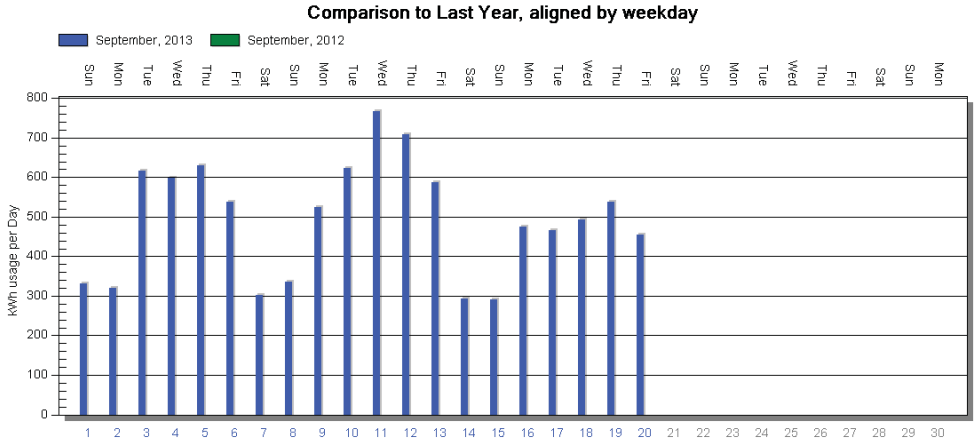
Building 4 : 1800ShamesDr

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 1.5





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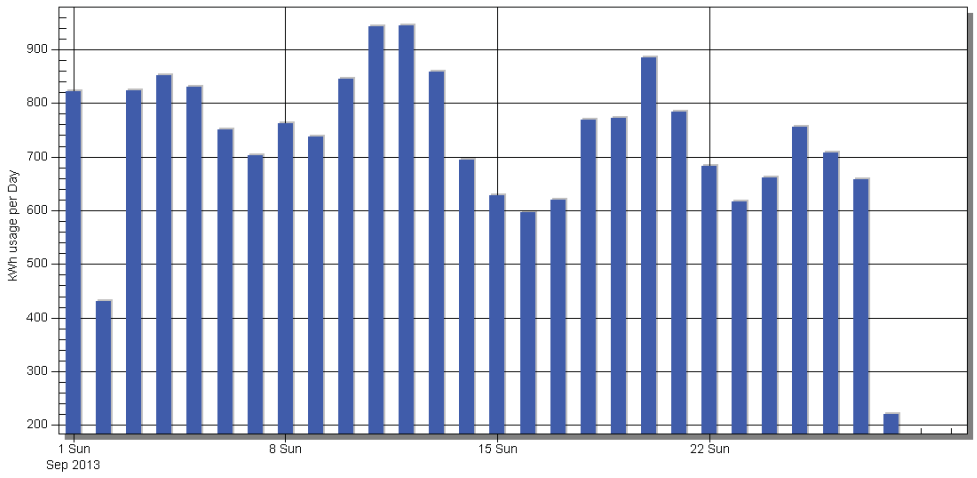
College Park Apartments
September, 2013 - Usage Summary Report

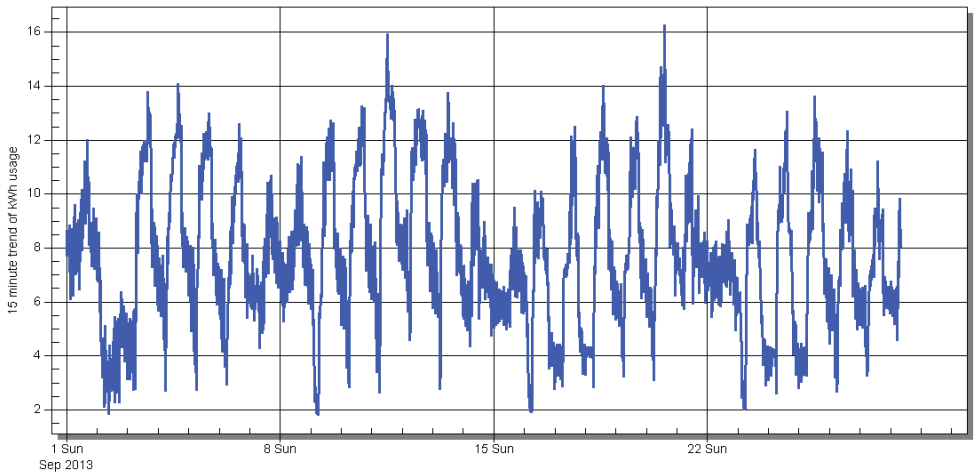
Building 6 : 1700ShameDr

Total Usage during Month
9/1/2013 to 9/30/2013

Total Usage	20354*
Peak Usage	16
Peak Demand	65

Figure 2.1





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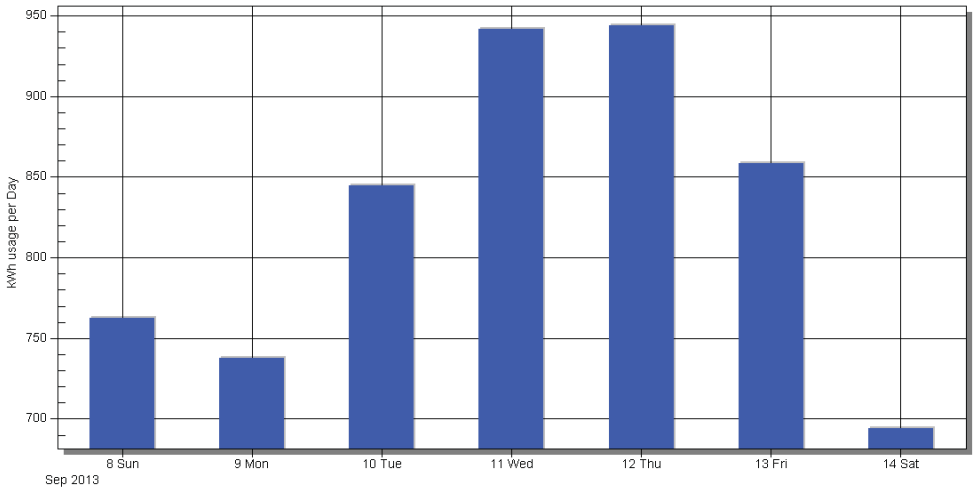
College Park Apartments
September, 2013 - Usage Summary Report

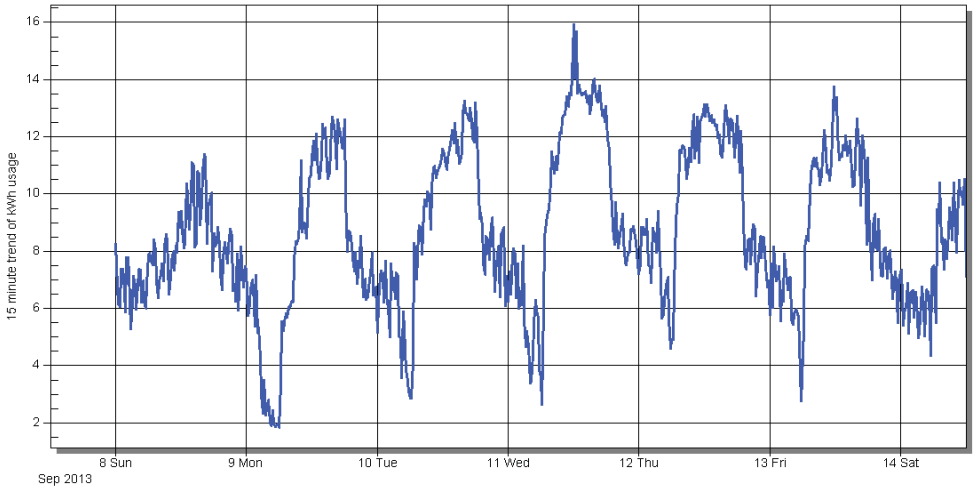
Building 6 : 1700ShameDr

Total Usage during Peak Week
9/8/2013 to 9/14/2013

Total Usage	5784
Peak Usage	16

Figure 2.2





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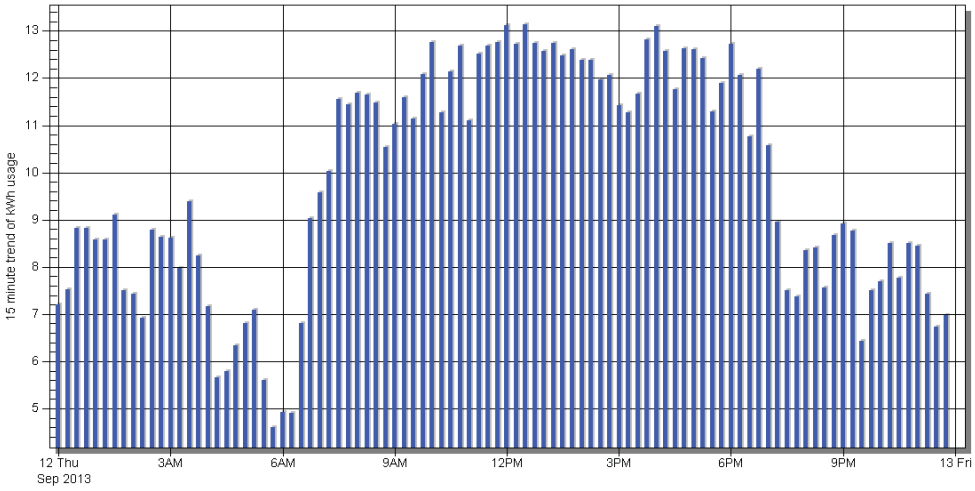
September, 2013 - Usage Summary Report

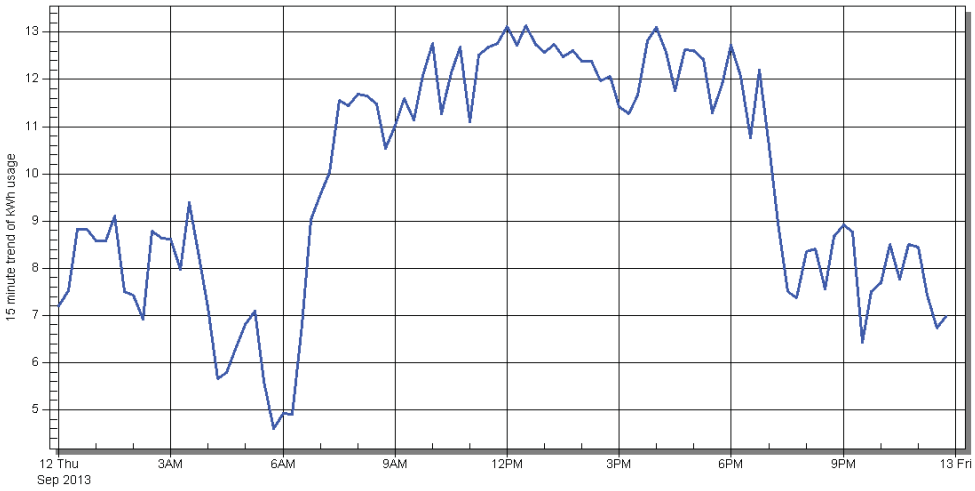
Building 6 : 1700ShameDr

Total Usage during Peak Day
Thursday, September 12, 2013

Total Usage	944
Peak Usage	13

Figure 2.3





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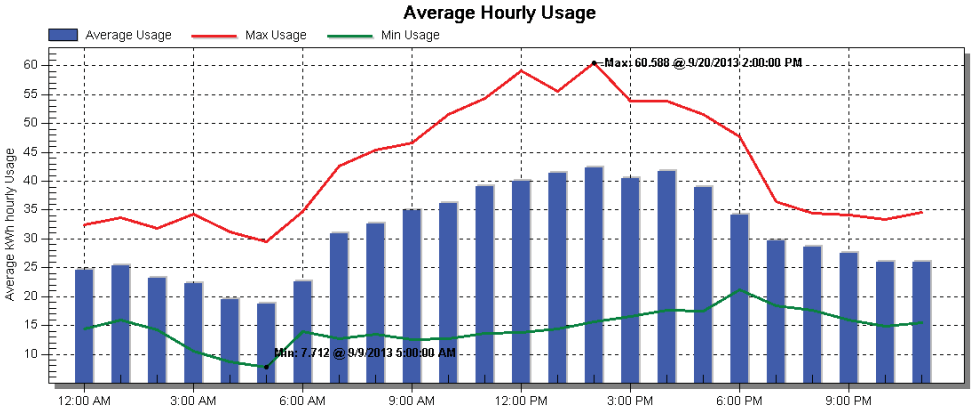
September, 2013 - Usage Summary Report

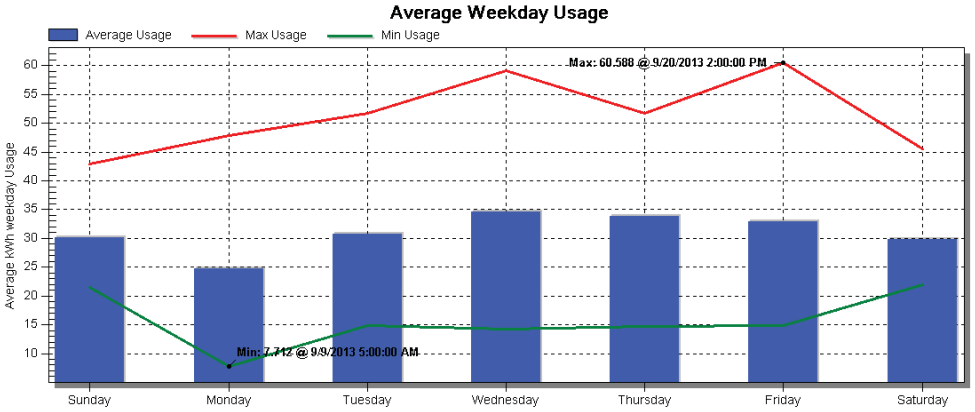
Building 6 : 1700ShameDr

Average Hourly and Daily Usage

Displays the average usage over the course of the month, averaged by hour, and by weekday. The highest and lowest usage for each hour and weekday over the course of the month are determined, and displayed as the bounding lines in Red and Green.

Figure 2.4





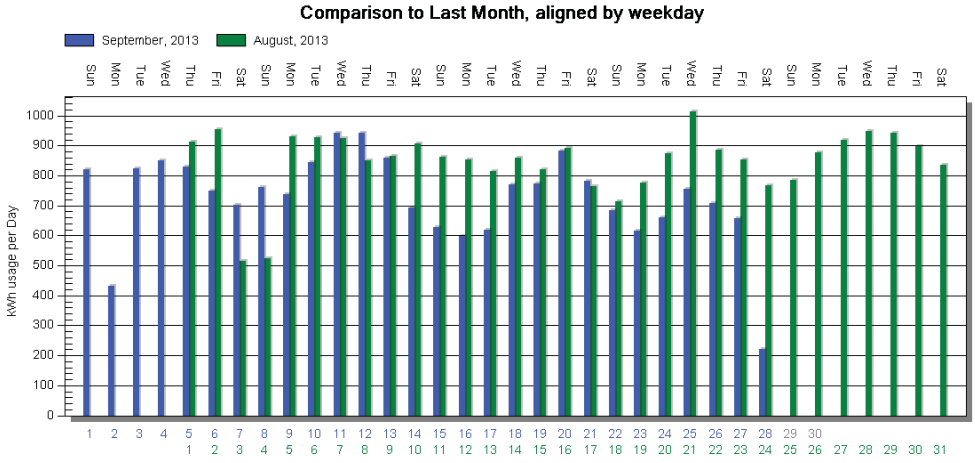
College Park Apartments
September, 2013 - Usage Summary Report

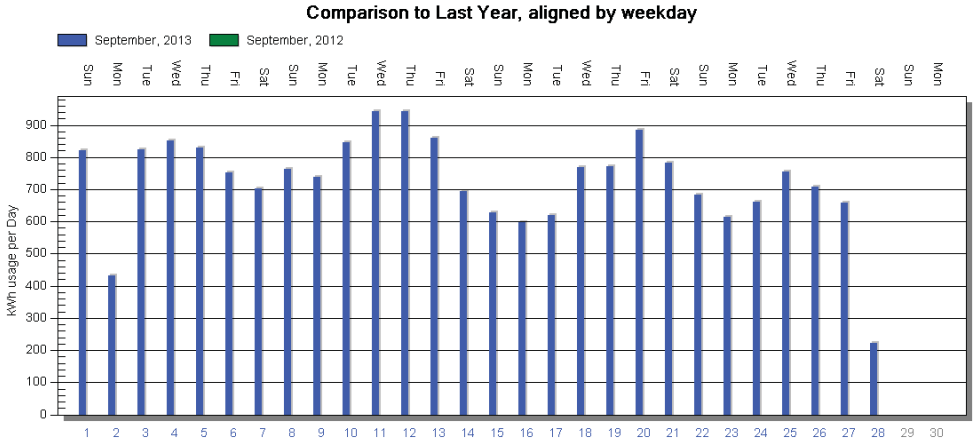
Building 6 : 1700ShameDr

Comparison to previous Month and Year

Displays a comparison of daily usage between this month and last month, and this month this year and this month last year. The daily usage is lined up by week day for each month. The numbers at the bottom indicate what day in the month each bar represents: The top value is the current month, the bottom value the month being compared against.

Figure 2.5





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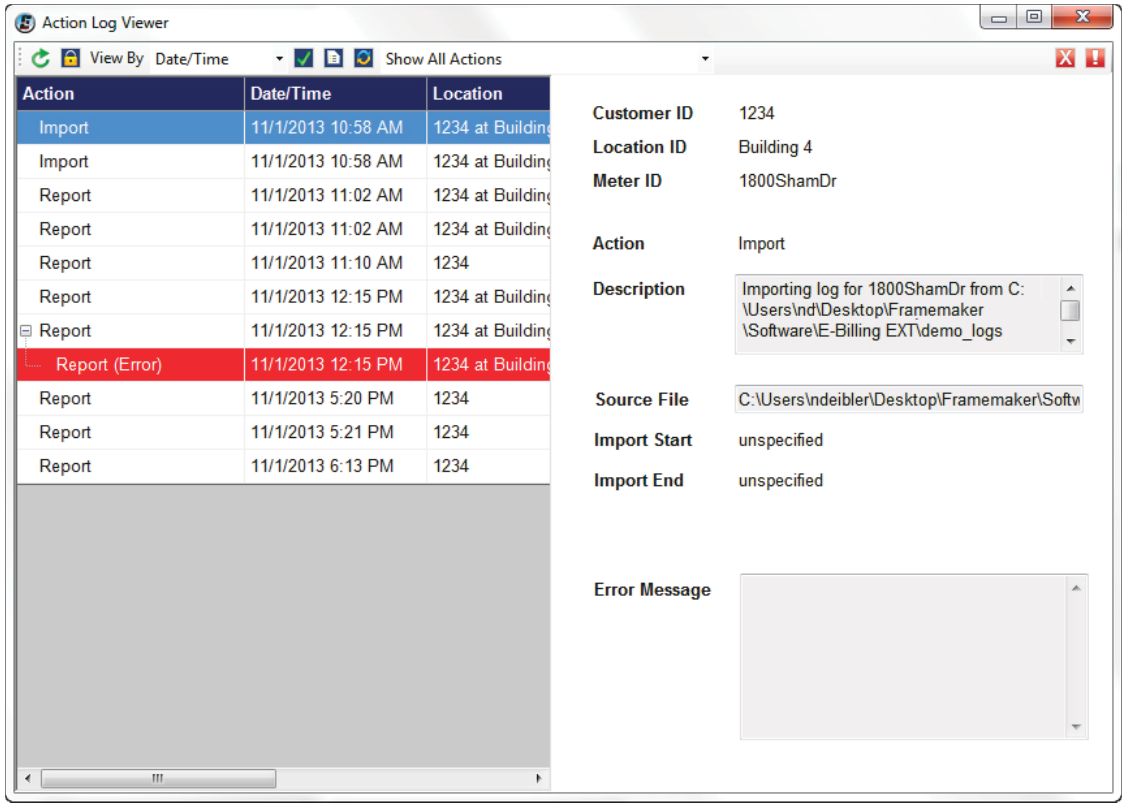
9: Additional Features and Advanced Functions

9.1: Viewing the Action Log

The E-Billing EXT™ application has a log in which actions such as importing, generating bills, updating data and sending emails are stored. You can view this log through the Action Log Viewer, which is available from the E-Billing Settings Editor. In addition, errors can be viewed and corrected from the Action Log Viewer.

1. From the E-Billing Settings Editor, click Tools>View Action Log. See the example screen below.


Action Log Viewer
View By Date/Time
Show All Actions
Action
Date/Time
Location
Import 11/1/2013 10:58 AM 1234 at Buildin
Import 11/1/2013 10:58 AM 1234 at Building
Report 11/1/2013 11:02 AM 1234 at Building
Report 11/1/2013 11:02 AM 1234 at Building
Report 11/1/2013 11:10 AM 1234
Report 11/1/2013 12:15 PM 1234 at Building
Report 11/1/2013 12:15 PM 1234 at Building
Report (Error) 11/1/2013 12:15 PM 1234 at Buildin
Report 11/1/2013 5:20 PM 1234
Report 11/1/2013 5:21 PM 1234
Report 11/1/2013 6:13 PM 1234
Customer ID 1234
Location ID Building 4
Meter ID 1800ShamDr
Action Import
Description Importing log for 1800ShamDr from C:\Users\nd\Desktop\Framemaker\Software\E-Billing EXT\demo_logs
Source File C:\Users\ndeibler\Desktop\Framemaker\Softw
Import Start unspecified
Import End unspecified
Error Message

2. The actions are shown in the left side of the screen. Any errors are shown in red.

3. Click on an action to display information about it in the right side of the screen.

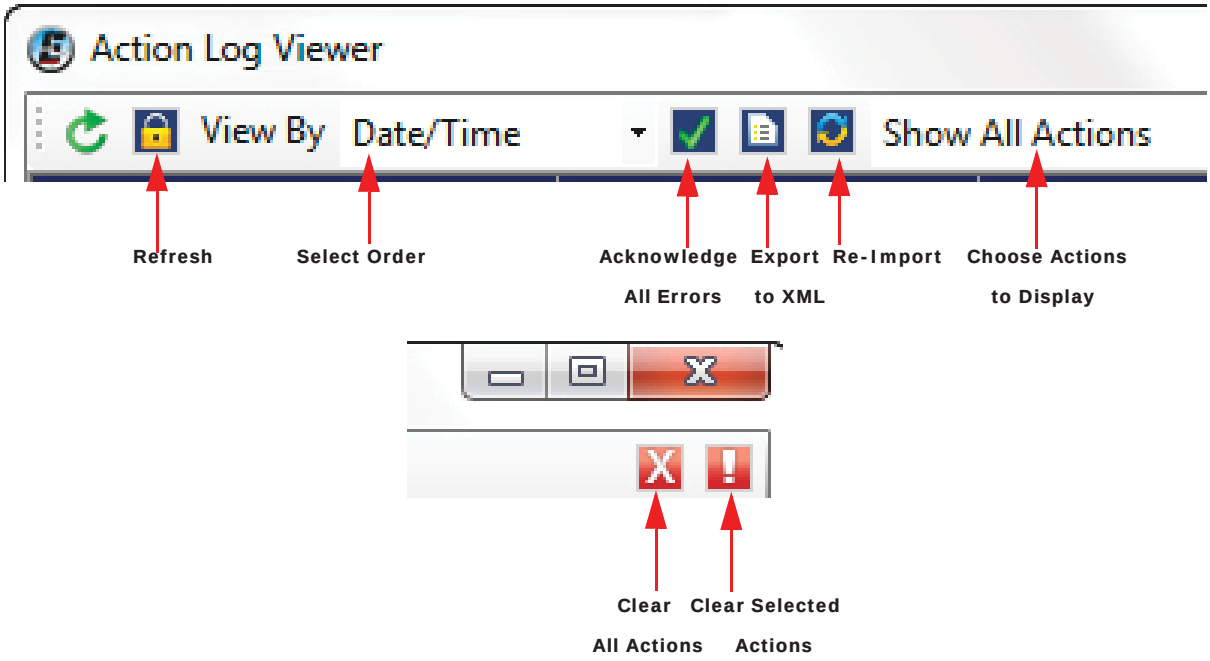
4. To display options, right-click on the action or error:

   - If you right-click on an action, you can select to:
     - Repeat the action, e.g., re-import data if the action is “Importing”

- Acknowledge All Errors: they won't show in red anymore.
- Delete Selected Actions: remove the action from the action log
- Hide Details/Show Details: this option toggles between hiding or displaying the detailed information on the right side of the screen.

- If you right-click on an Error, you have an additional option:
  - Mark as Acknowledged Error/Mark as Unacknowledged Error: this option toggles between acknowledging the error and removing acknowledgement of the error.

5. The options at the top of the screen let you:



- Refresh the action display by clicking the Refresh icon.
- Select the order of action display by clicking in the View By pull-down menu. The choices are Date/Time (the default setting), Customers, and Action Type.
- Acknowledge all Errors by clicking the checkmark icon.
- Export to XML by checking the document icon: this copies the action log in XML format - you can then paste it into an XML file.
- Re-import by selecting the two arrows icon.

- Select between Show All Actions and Select Unacknowledged Action Errors from the pull-down menu.
- Clear all actions by clicking the red X. You will see a Confirmation message window.
- Clear any selected action (highlighted action) by clicking the red exclamation point.You will see a Confirmation message window.

6. If there is an error in an action, you can correct the error and then perform the action again from the Action Log Viewer screen. For example, if there is an error in importing, you can correct it, and then click on the original action and select Re-import Data.

9.2: Best Practices When Configuring Log Files to Import From

NOTE: The following guidelines are offered to help you configure the system to work best. Other configurations will work.

- Configure the import location and import from the same computer: this helps to prevent setting up a location that may be inaccessible from the computer doing the import. The import location does not need to be the same computer that the database server is running on.
- Use local files: network shares and mapped drives can become inaccessible, which can prevent the data from being imported. It can also slow down the import, as shared files are slow to access. It is just the connection between the configuration and the log data that should be local: the data from the physical meter can be retrieved from another computer that maps to this one.
- Use globally accessible folders: System locations such as Documents, Users' Application Data, or Temp, are actually mapped to different locations for each user, by the operating system. This can lead to files "disappearing" if the current user changes. If you do use these locations, make sure they are the "Public" or "All Users" locations, as these are shared between all users on the computer.

9.3: Archive Database Clusters

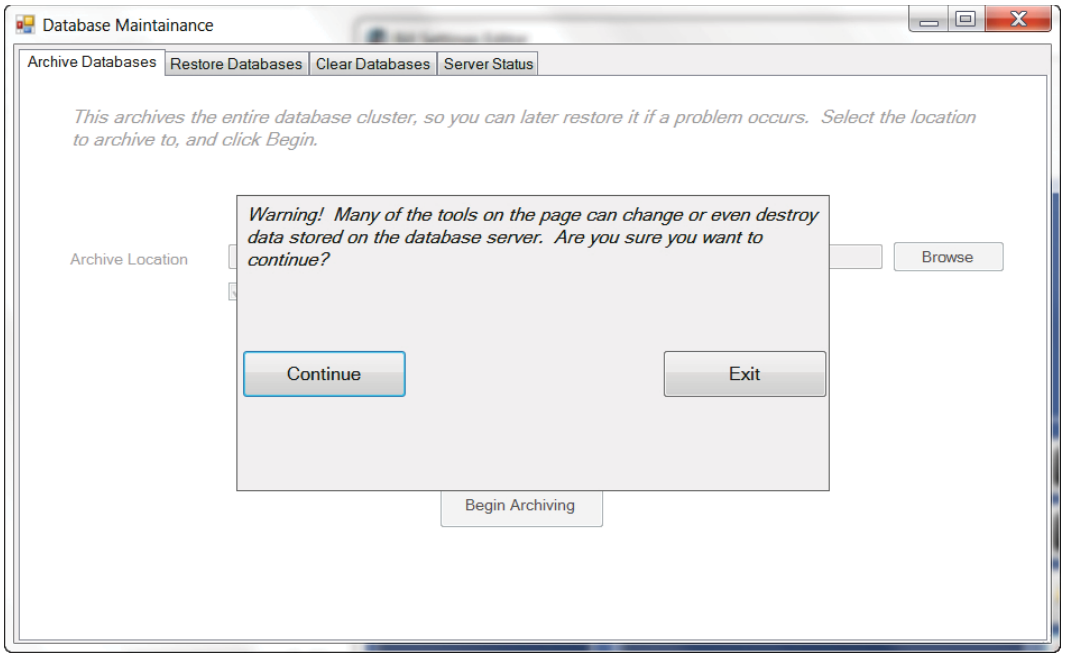
To ensure that your data is backed up, or if you want to migrate the database server from one computer to another, you can archive your database cluster. This creates a local copy of the data, which can later be uploaded to a server to restore the database to the saved condition.

NOTE: This function copies **all** of the data on the database server. Using this to restore to a server will **overwrite all** data.

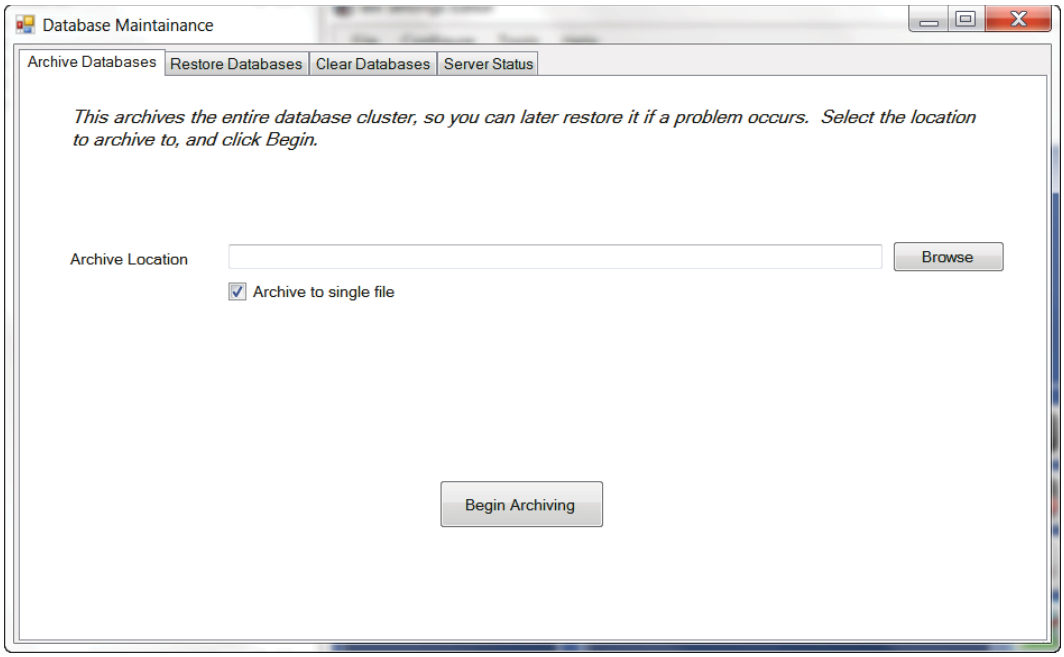
WARNINGS!

- A database archive can be extremely large. For example, a database with hundreds of meters, with data accrued for a few years, can be at least 20GB in size. Make sure you have the room to store the archive.
- Only the data stored on the server is saved. The server's settings and configuration must be manually re-configured when the data is restored.

1. To begin archiving, open E-Billing Settings Editor and click Tools>Database Maintenance>Maintenance Utilities from the main screen's Title bar. You will see the screen shown below, displaying a warning message.


Database Maintainance
Archive Databases
Restore Databases
Clear Databases
Server Status
This archives the entire database cluster, so you can later restore it if a problem occurs. Select the location to archive to, and click Begin.
Warning! Many of the tools on the page can change or even destroy data stored on the database server. Are you sure you want to continue?
Archive Location
Browse
Continue
Exit
Begin Archiving

2. If you are sure you want to archive, click Continue (if you do not want to archive, click Exit). The warning message goes away and you see the fields shown below.

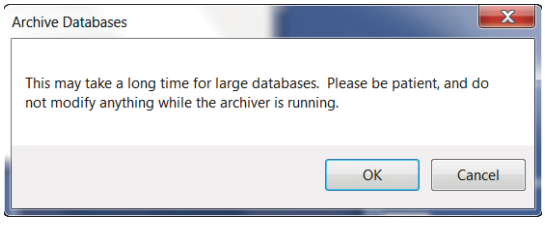

Database Maintainance
Archive Databases
Restore Databases
Clear Databases
Server Status
This archives the entire database cluster, so you can later restore it if a problem occurs. Select the location to archive to, and click Begin.
Archive Location
Browse
Archive to single file
Begin Archiving

3. Click the Browse button to choose the location you want to save the archive to.

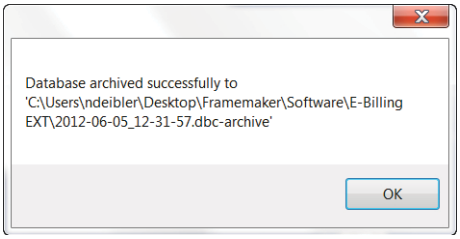
4. To save the database to a single file, leave the checkbox selected. This option makes it easier to store and transfer the archive, but may cause problems for older operating systems.

   WARNING! You should disconnect the database so that no one else can modify it while you are performing the archive. Otherwise the archive may be corrupted.

5. Click the Begin Archive button. You will see the message window shown on the right. Click OK to continue.
   Once you begin archiving the database, the process won't stop until the entire database has been archived. As the message says, this can take a very long time, so be patient.


Archive Databases
This may take a long time for large databases. Please be patient, and do not modify anything while the archiver is running.
OK
Cancel

6. You will see a progress screen while the database is being archived, and a message window once the archiving is successfully completed. See the screen below.



Click OK to close the message window.

9.4: Restore Database Clusters

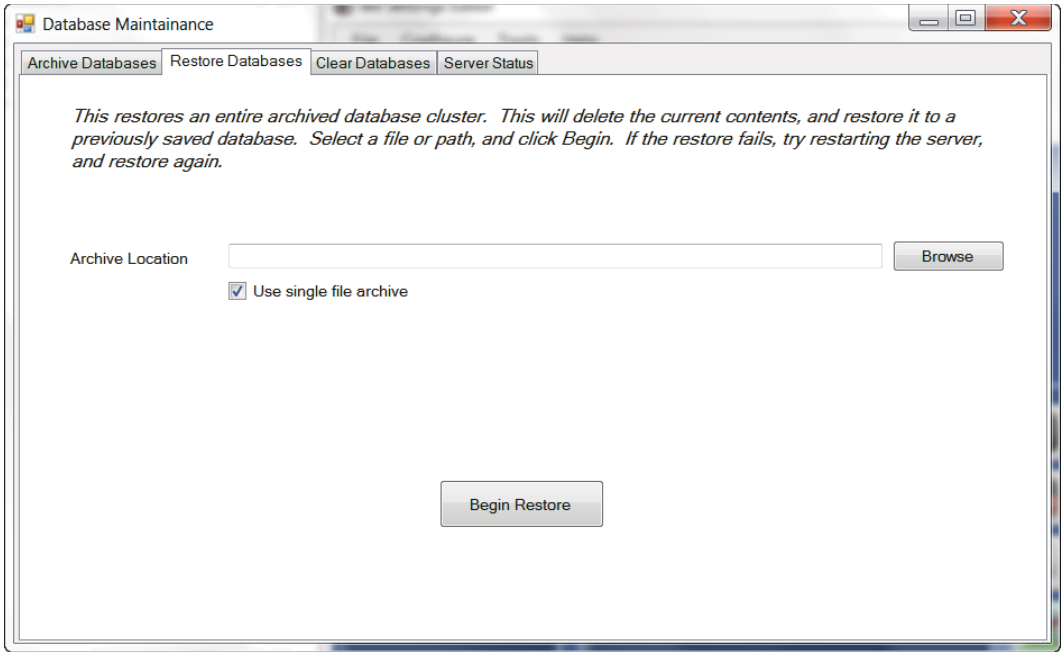
If you ever need to recover from a corrupted database, or if you want to move your database server to another location, you can restore a database cluster from an archive created with the Archive Database tool.

WARNING! Restoring a database archive **overwrites all** the data in the database cluster. Any data already there will be lost.

NOTE: Only the data stored in the database is restored. Any server configurations or back-end changes must be re-configured manually.

1. From the E-Billing Settings Editor main screen's Title bar, click Tools>Database Maintenance>Maintenance Utilities.

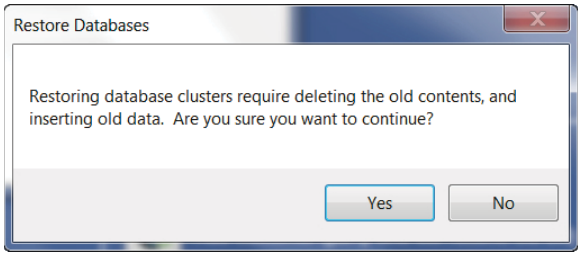
2. Click the Restore Databases tab. You will see the screen shown below.


Database Maintainance
Archive Databases
Restore Databases
Clear Databases
Server Status
This restores an entire archived database cluster. This will delete the current contents, and restore it to a previously saved database. Select a file or path, and click Begin. If the restore fails, try restarting the server, and restore again.
Archive Location
Browse
Use single file archive
Begin Restore

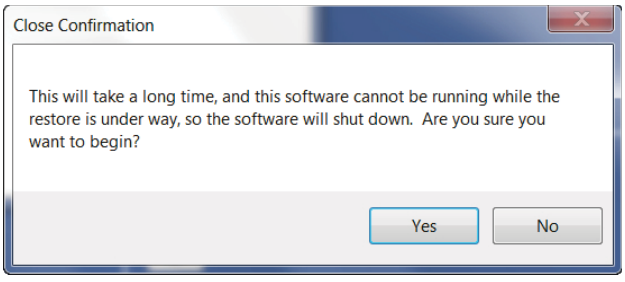
3. Click Browse to locate the database archive you want to restore.

4. If the archive was stored in a single file, leave the checkbox selected. If it was stored in multiple files, uncheck the box.

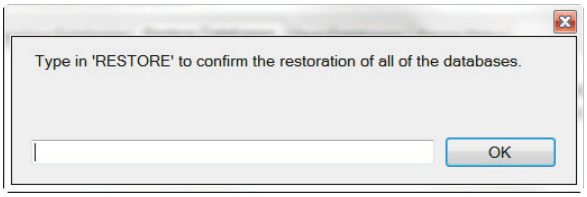
5. Click Begin Restore to restore the database. You will see the message window shown on the right.


Restore Databases
Restoring database clusters require deleting the old contents, and inserting old data. Are you sure you want to continue?
Yes
No

6. Click Yes to continue. You will see the message window shown on the right.


Close Confirmation
This will take a long time, and this software cannot be running while the restore is under way, so the software will shut down. Are you sure you want to begin?
Yes
No

7. Click Yes to continue. You will see the message window shown on the right. Key RESTORE in the blank field and click OK.



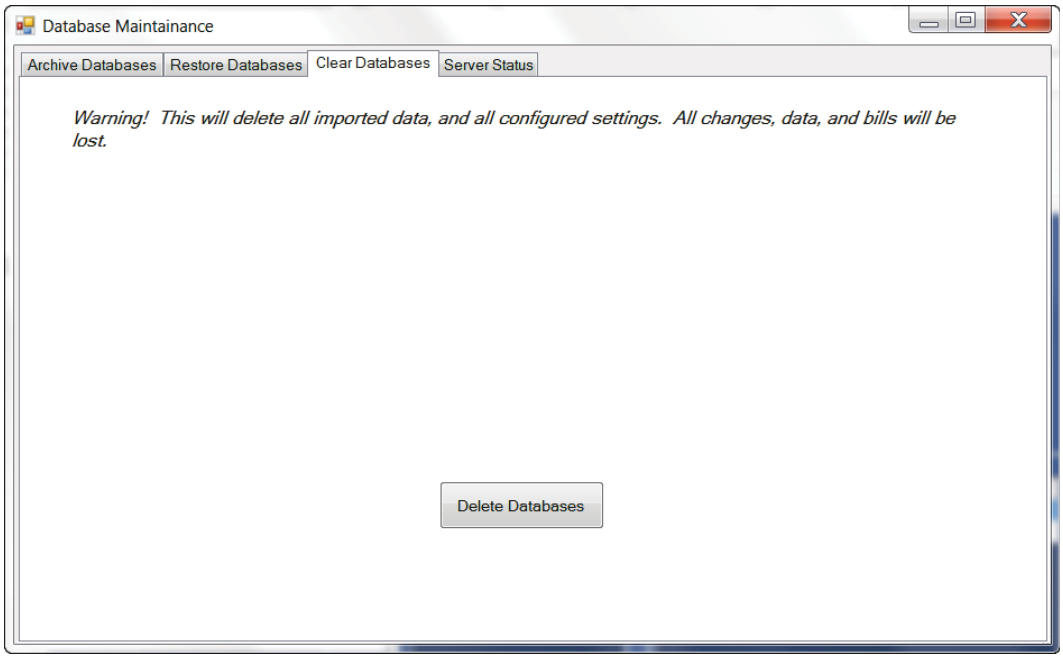
8. While the database is being restored you will see a screen showing the progress.

   If there is a large amount of data, this process may take a long time to complete, e.g., it will take hours to restore a 20 Gigabyte database archive. When the restore is done, the window closes. You can now re-open the E-Billing EXT™ application.

9.5: Additional Database Options

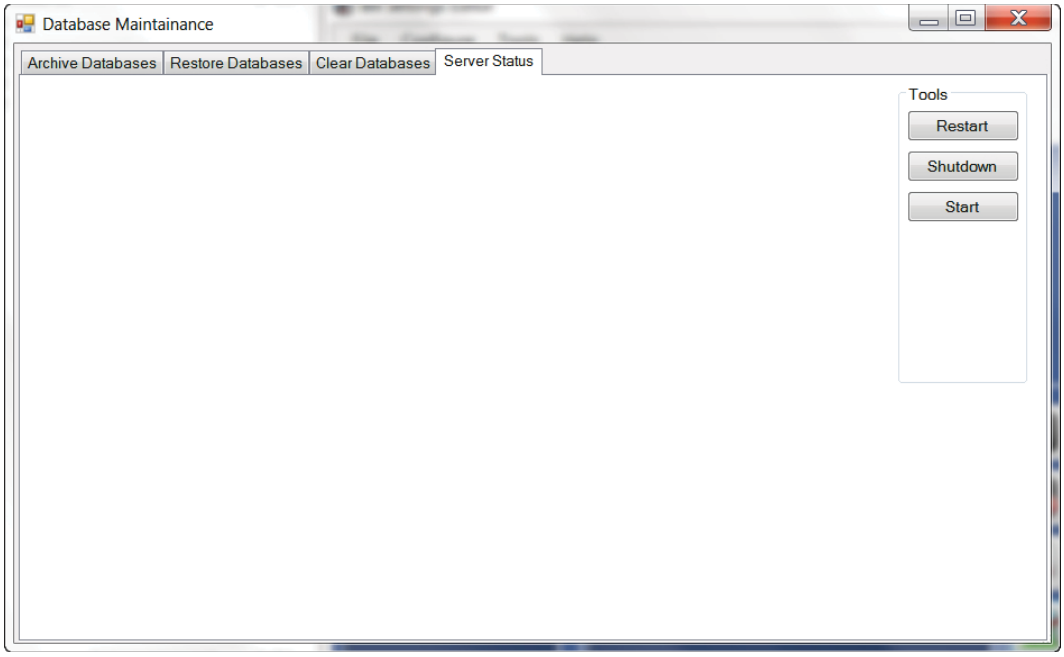
The Database Maintenance screen has two additional options:

- Clear Databases: click this tab to display the screen shown below.


Database Maintainance
Archive Databases
Restore Databases
Clear Databases
Server Status
Warning! This will delete all imported data, and all configured settings. All changes, data, and bills will be lost.
Delete Databases

WARNING! Make **very sure** that you want to delete all of the data in the database before you click Delete Databases. This command deletes **all** imported data and **all** configured settings, including all bills and any changes you have made to data.

- Server Status: click this tab to display the screen shown below.



You have three options:

- Restart: click this button to start the local database server after it has been shut down.

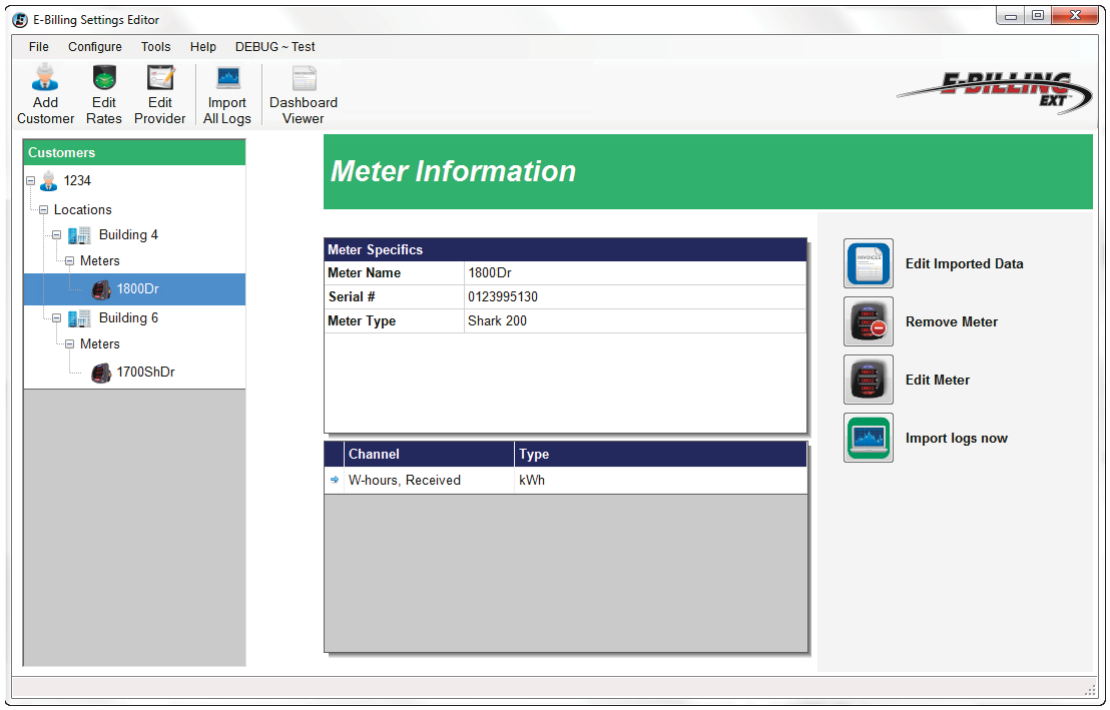
- Shutdown: click this button to close the local database server. You see a window that shows the progress of stopping the server, and then a window telling you that the software must be shutdown to finish stopping the server. Click OK to proceed with the shutdown.
  NOTE: The local database server does not close when you exit the E-Billing EXT™ application. You must use this command if you want to close it.

- Start: click this button to start the main Database server (not the local database server) if it is not opening correctly (it should open when the software starts).

9.6: Clear Meter Data

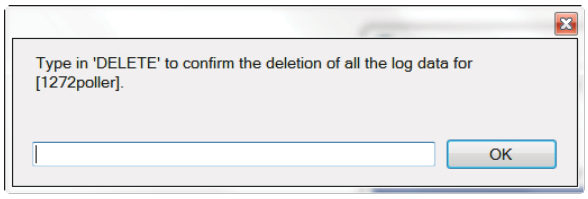
The E-Billing Settings Editor gives you the option to clear meter data. You may want to do this if you imported the incorrect data or corrupted data and want to remove it.

1. From the E-Billing Settings Editor Location screen, highlight the meter whose data you want to clear. See the example screen below.



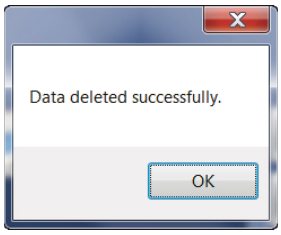
2. From the Title bar, click Tools>Database Maintenance>Clear Meter Data.

3. You will see a window that prompts you to enter DELETE. See the example screen on the right.
   Type DELETE in the entry field and click OK to delete the meter data.



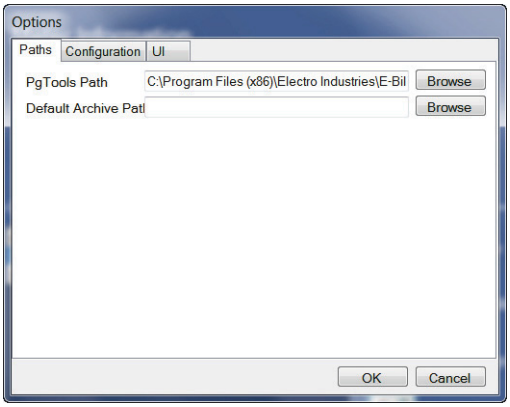
4. You will see the message window on the right.

   Click OK to close the message window.

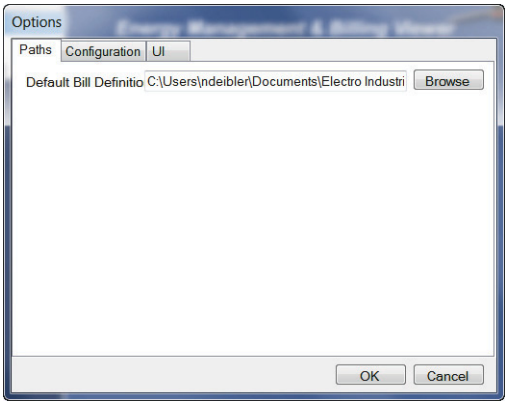


9.7: Option Screens

Both the E-Billing Settings Editor and E-Billing Dashboard Viewer have an Options screen. You access this screen by clicking Tools>Options from the main screen's Title bar. The screen has three tabs for settings: Paths, Configuration, and UI. The settings are the same on both screens, except for the Paths settings. See the screens below.



E-Billing Settings Editor Options Screen



E-Billing Dashboard Viewer Options Screen

9.6.1: Path Setting

E-Billing Dashboard Viewer setting:

- Default Bill Definition: this is the template for the bills. Click Browse to set up another location.

E-Billing Settings Editor settings:

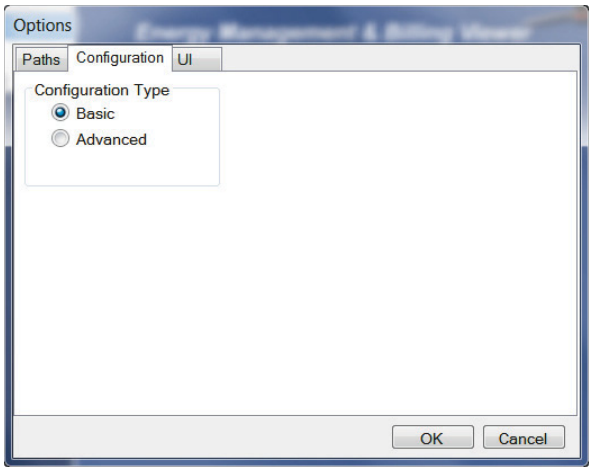
- Pg Tools Path: this is the path to the pg_tools exe, which is a utility used to archive, restore, and perform other maintenance operations on the database cluster. Click Browse to set up another location.

- Default Archive Path: this is the default location where the archive is stored when the database cluster is archived. Click Browse to select the location.

9.7.2: Configuration Setting

The settings are the same for both the E-Billing Dashboard Viewer and the E-Billing Settings Editor. This setting controls what options are available to the user.

1. Click the Configuration tab. You will see the screen shown below.



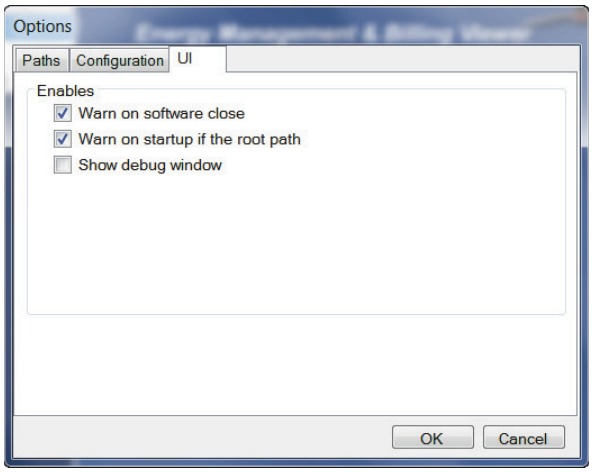
2. Click the radio button of the option you want to set:

- Basic restricts access to functional billing tasks and provides a user friendly interface to configure settings.
- Advanced provides access to all options, and should only be chosen for advanced users.

9.7.3: UI (User Interface) Setting

Except for one setting, the E-Billing Dashboard Viewer and E-Billing Settings Editor Option screens have the same UI settings.

1. Click the UI tab. You will see the screen shown below.



2. These are the setting options:

   - Warn on software close: this setting asks the user to confirm closing the software. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark.

   - Warn on startup if the root path is invalid: this setting verifies that the database server has been configured correctly and is accessible. The default of the setting is checked - selected. To un-select the setting click on the checkbox to remove the checkmark (this is not recommended).

   - Show debug window: click the checkbox to show the debug trace window while the software is running.

3. Click OK to close the screen and apply your settings.

9.8: Performing Tasks Using Command Line

You can trigger an import of all meters or generate all bills from command line. This feature is used if you wish to launch the E-Billing EXT™ application from a third party application and have it run tasks. Using the command line, the E-Billing EXT™ application can be embedded, as a launch command, into any third party application.

9.8.1: Import Data Using Command Line

This can be useful for automating the importing of data. The command you use is as follows:

"[Path]\BillSettingsEditor.Master.exe" --script --import meter=all

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.
  For example:
  "C:\Program Files (x86)\Electro Industries\E-Billing EXT\BillSettingsEditor\Bill-Settings Editor.Master.exe" --script --import meter=all

9.8.2: Generate All Bills Using Command Line

This can be useful for automating the generation of bills. Make sure this runs after all the data for the month has been imported. The command you use is as follows:

"[Path]\BillViewer\BillViewer.exe" --script --generate_bill

IMPORTANT!

- [Path] is the path to the application on your PC.
- You must include the quotation marks.
  For example:
  "C:\Program Files (x86)\Electro Industries\E-Billing EXT\BillViewer\Bill-Viewer.exe" --script --generate_bill

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Glossary

<pg_data>	The data directory for the PostGreSql database cluster for the E-Billing Ext™ application. This is the "<Common Application Data>\Electro Industries\Server\PostGreSql\8.4\Data" directory.
For Windows® XP:	This is typically "C:\Documents and Settings\All Users\ApplicationData\ElectroIndustries\Server\PostGreSql\8.4\Data".
For Windows® 7:	This is typically "C:\ProgramData\ElectroIndustries\Server\PostGreSql\8.4\Data".
<pg_exe>	The directory which contains the PostGreSql Database Server executable. This is typically "<Program Files>\Electro Industries\Server\Post GreSQL\8.4".
E-Billing Settings Editor	The E-Billing Ext™ software for administering the Billing Package, including location configuration, data import, rate configuration, and modifying data values.
Bill Structure	Another name for Rate Structure.
E-Billing Dashboard Viewer	The E-Billing Ext™ software for generating bills, viewing bills, and trending the data values.
Billing Database	The internal storage on the database cluster which holds all the data imported from the meters.
Channel	A single type of data item, such as kWh or pulses.
Charge	A monetary value applied to the bill, outside of the normal usage. This includes things such as a peak demand charge, credits, and taxes.

Commodity	A type of channel (typically from Energy or accumulations) which is a usage value the software uses when computing the rates for a bill.
Customer	The person or organization which is receiving the bill. A customer may have multiple locations, each of which gets its own bill.
Database Cluster	The collection of databases which the Database Server provides access to. A database server may provide access to multiple database clusters.
Database Server	The combination of computer and process that provides the interface to the database cluster (currently PostGreSql 8.4).
E-Billing Ext™	The package of software which includes E-Billing Settings Editor, E-Billing Dashboard Viewer, and the Database Server.
Import Location	The actual source of the data imported for the meter. This is typically a log file, such as an HMI Ext™ .dbf file, or a Communicator Ext™ .db log file. This file is scanned when imported, and new data is placed into the billing database.
Location	A single unit for which a bill is generated. Each location may have its own set of meters and rate structures.
Meter	A data monitoring unit, which acts as an import point for collecting usage data. Each meter may have multiple channels, but only one channel can be assigned to a commodity at a time. When multiple meters are at a single location, the matching usage values are aggregated when generating the bill.

Provider	The person or organization which is providing the energy, sending the bill, and receiving payments.
Rate	The monetary value applied to the usage which occurs during specific periods.
Rate Structure	The collection of settings which determine what rates to apply to the usage values for a commodity. Includes calendar rates (such as on peak and off peak), holidays, and other charges.

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